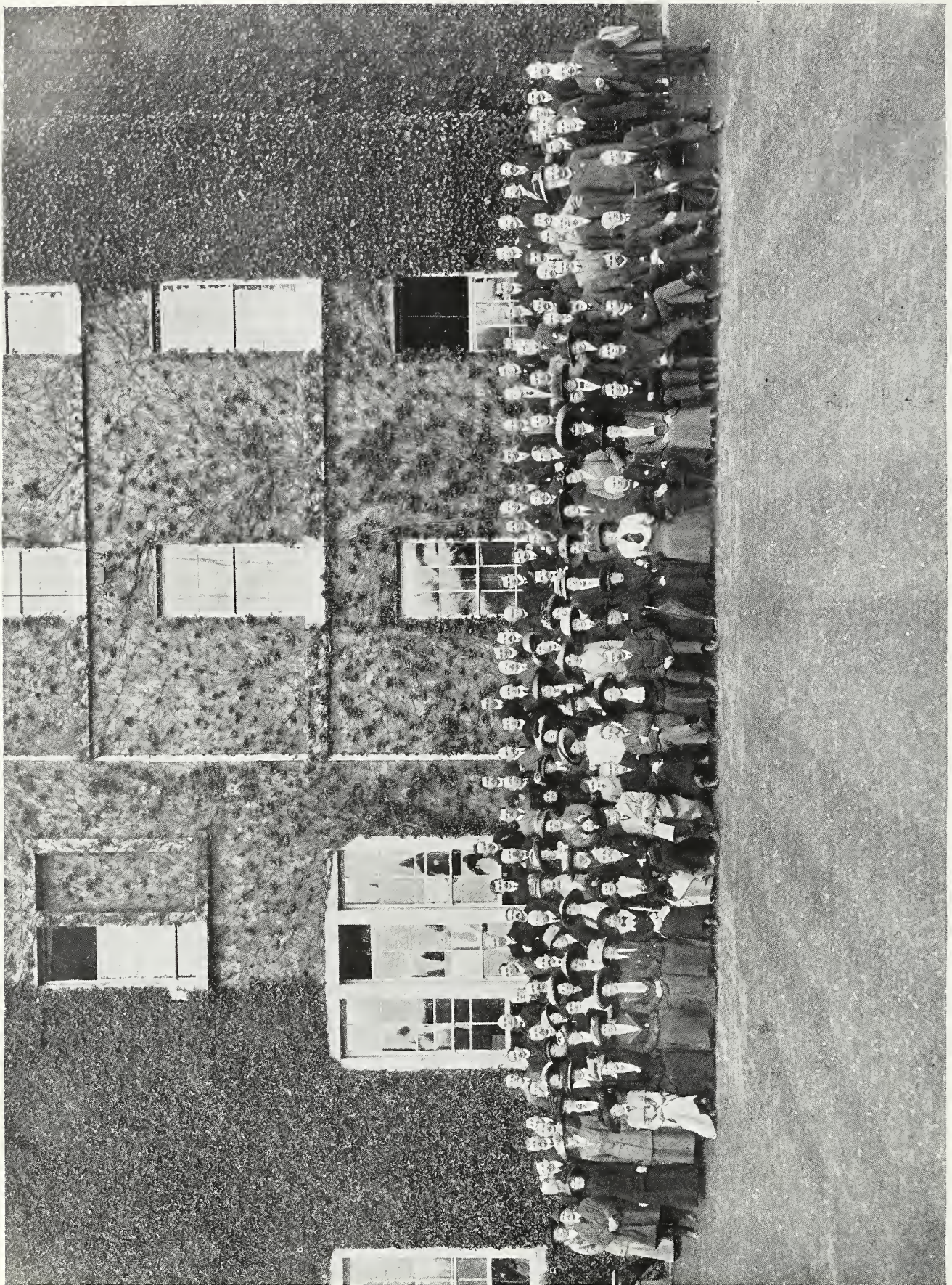


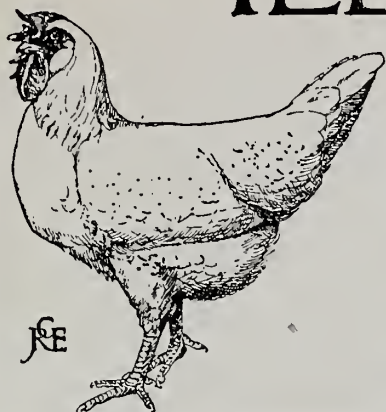
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MEMBERS OF THE POULTRY CONFERENCE HELD AT DUBLIN ON MAY 4 AND 5, 1911.

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The Editor will be glad to hear from readers on any Poultry Topics, and all Queries addressed to the paper will be answered by experts in the several departments. The desire is to help those who are in difficulty regarding the management of their poultry, and accordingly no charge for answering such queries is made.

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The Conference at Dublin.

From beginning to end the gathering organised by the Irish Department of Agriculture was an unqualified success, and that Government body may be warmly congratulated upon the result of its work. The one criticism which may be offered is that the time was too short, and, as a consequence, in several instances the discussions had to be abbreviated, in addition to taking the papers as read. One day more might easily have been devoted to it, and two days might fairly have been given. In spite of that restriction the business was full of the deepest interest, as a proof of which the attendance on the second day was practically equal to the first. The Conference was held under the most auspicious conditions. It is a notable event that the Lord-Lieutenant of Ireland should have been present to accord a welcome to the delegates, and Lord Aberdeen's words will long be remembered by those present. It was also notable that the Countess of Aberdeen should have sat through three out of the four sessions. The fact that sixty delegates were present from Great Britain was warmly appreciated. Very handsome tributes were paid by visitors to the splendid work done by the Department of Agriculture, the respective County Committees, and the Irish Agricultural Organisation Society in promotion of the poultry industry.

Practical Results.

On another page we give a brief summary of the proceedings, which are to be issued in complete form at an early date, when it may be studied by all who are interested in this question, as it should form a valuable work of reference. It is, however, too early to speak of actual results, though some of these were

apparent at the Conference itself, notably in the realisation of the important place occupied by this branch of agriculture, by the presence of representatives of various English and Scottish Agricultural Colleges, who were evidently impressed by what they heard, and by the interchange of opinions between producers, co-operators, and traders which cannot fail to lead to a clearer and better understanding among those intimately concerned. So far as Ireland is concerned the agricultural authorities needed no spur to their interest in poultry-keeping. That has been manifested for years. But we feel that this Conference cannot fail to act as a spur to those in Britain who have lagged far in the rear. Whilst the conditions in Ireland are totally different to those met with over the greater part of Britain, and it would be undesirable to adopt exactly similar methods, the fact that at an expenditure of £7,500 per annum the value of eggs and poultry exported to Britain has increased by £853,000 in six years is an object-lesson of what can be accomplished by a judicious expenditure of public money, when applied practically and systematically.

Future Conferences.

It was suggested that similar gatherings should be held from time to time, at intervals of two or three years, and that the next should be in Scotland, by which time many of the developments now being made in North Britain will have materialised. Such a proposal will, we anticipate, be universally approved. Hitherto the main difficulty has been in securing the necessary funds, but now that the Irish Department of Agriculture has set an example by undertaking cost and labour, if other central authorities follow suit the way will be comparatively easy. The officials at Dublin threw themselves with earnestness and enthusiasm into the work. Difficulties, of which there were not a few at the outset, disappeared as a result of their tact and determination, and there were no signs of that red-tape and cold-blooded officialism which is thought to be inseparable from Governmental departments.

Poultry in Parliament.

On April 5 first reading was given in the House of Lords to a Bill, presented by Earl Carrington, President of the Board of Agriculture, "to enable orders to be made under the Diseases of Animals Act for protecting live poultry from unnecessary suffering, and for other purposes connected therewith," and, also, "for requiring the cleansing or disinfection of

receptacles or vehicles for the conveyance of live poultry." The Act has, however, a much wider meaning than represented above, in that under the Diseases Act of 1894 the expression "animals" will include poultry, which has not been the case hitherto. If such should be the case, although it may involve restrictions on poultry-keepers from which they have heretofore been free, we believe the advantages will be very great, and much more than compensate. It will widen the powers of the Board of Agriculture and enable that body to afford protection to poultry-keepers not now available. We hope it may be extended to the "Dogs Act, 1906," so as to prevent the injustice of the first bite referred to in the POULTRY RECORD in April.

Poultry Factories.

We reproduce on another page selections from a most interesting article which recently appeared in the *Dundee Advertiser* dealing with American methods of poultry-keeping, in which an explanation is given why many of the huge establishments in America have come to grief. The writer points out that these plants have frequently been run by manufacturers, who failed to realise that in the hen they are dealing with a highly organised living creature, which could not be treated as if it were a piece of inert, lifeless material. That fact must never be forgotten by poultry-breeders; in fact, they must learn it sooner or later. If not understood at the outset the results are certain to be disastrous, as many have learnt when their money had been expended. All operations must be based upon its recognition. A further point emphasised in the article referred to is that hens forced for egg-production should not be used as breeding stock, and that growing the latter within small runs is bound to lead to debility of constitution and to ultimate failure. As wisely stated, "the only way an intensive plant can hope to succeed is by breeding its stock on unlimited range."

Single-Pen Breeding.

Many years ago a well-known exhibitor, whose stock was among the best of its day, adopted the plan of enclosing, during the breeding season, each hen used for breeding within a separate compartment and run, to which the male had access for a limited period every day, in order that he could register the actual pedigree on both sides of every chicken hatched. The initial expense of the equipment was heavy and the labour great, but he declared that the results fully repaid him. For obvious reasons such a system has not been

applied, so far as we are aware, to utility poultry-keeping, though the advantages would be considerable. One difficulty we have as compared with breeders of larger stock is that, whilst we may know the fatherhood of every chicken, the maternal ancestry is less clearly defined, more especially where operations are on an extensive scale and individual observation less keen. It may be known that one out of six or a dozen hens is the mother, but few can tell the actual parent. To remedy this Mr. D. F. Laurie, Poultry Expert to the South Australian Government, is using continuous houses, divided into 3ft. compartments, outside of which are runs 20ft. by 3ft., in each of which a single hen is kept for the breeding period, the male bird being transferred from one to the other in rotation, and he states that the result has been in every way satisfactory. It is entirely a question as to expense in relation to the benefits obtained. A house and runs to accommodate ten hens would cost several times as much as one maintaining all in one flock, and would be in many cases prohibitive. Upon that point Mr. Laurie throws no light. Trap-nesting effects the same purpose and is much more economical, although sometimes not quite so definite. For that reason it is likely to be preferred.

Model Small Holding at the Crystal Palace.

Not the least interesting of the many attractions provided by the Festival of Empire at the Crystal Palace is the Small Holdings and Country Life Section, which is now practically complete. About ten acres of land have been set apart for this purpose, and here may be seen a model small holding, with an excellently-designed four-roomed bungalow, cow sheds, piggeries, dairy and poultry pens; in fact, everything appertaining to the needs of the small holder, who is to-day so very much in evidence. This section includes a model garden and fruit plantation, and experimental plots for the testing of wheat, oats, and barley. No effort has been spared by the Committee to make this section educational in every respect, yet, at the same time, of great interest to the general public. Mr. Randolph Meech, of Poole, with his usual far-seeing business ability, has taken upon himself the task of laying out the site and providing the whole of the equipment, which, needless to remark, is done in his usual painstaking manner. In this work he has had the co-operation of Messrs. Abbot Bros., of Thuxton, who are supplying the whole of the live stock, which includes some twenty varieties of utility poultry, ducks, geese, turkeys, sheep, pigs, cows, and horses. In addition to this, Mr. Meech, with the help of Miss Carey,

has laid down a plan for a system of intensive poultry culture, not too well known in this country, but which has apparently met with great success in the United States, where it is known as the Philo System.

Exhibition of Breeding-Pens.

Although situated in the same section, the exhibition of breeding-pens of poultry is quite distinct from the Small Holding Section. The arrangements for this feature were in the hands of the Poultry Division Committee, and their efforts have resulted in getting together a unique collection of breeding-pens of poultry, the like of which, it may safely be said, has never before been seen in this country. In all there are fifty-one pens—each containing three hens and a cock—supplied by many of the best known poultry breeders in Great Britain. The birds are accommodated on grass, in runs measuring twenty feet by ten feet, which are all wired over at the top. They are excellently housed and each pen is provided with a broody-coop. The contract for feeding has been secured by the Allen Poultry Co., Ltd., of Sawbridgeworth, Herts, and Captain R. R. Allen is giving the department his personal supervision, with the assistance of Mr. P. L. Stanley, who, until quite recently, was in occupation of his own farm near Leamington. It is doubtful whether a better manager than Mr. Stanley could have been found, and exhibitors may feel assured that their property will be well cared for.

The Question of Disease.

Mention was made at the Dublin Poultry Conference of the importance of researches in respect to diseases of fowls, but we do not think that sufficient attention was given there, or elsewhere, to this subject. Increase of numbers and even betterment of conditions have their risks, one of the gravest of which is the greater danger of disease and consequent loss. Information is to hand that in Orkney, where the development of poultry-keeping of late years has been phenomenal, tuberculosis amongst poultry has declared itself to an enormous extent and is seriously threatening the industry. At this we are scarcely surprised. The homes of the crofters, the cattle byres, and the poultry quarters are all conducive to the development of this fell disease. Perhaps it needs a drastic lesson to teach people the principles of hygiene, whether for themselves or their live stock. This is a further instance in proof of the need for practical instruction and education *pari passu* with efforts for development.

PASTURE OR ARABLE LAND FOR POULTRY.

By EDWARD BROWN, F.L.S.



HERETO the great majority of those who have taken up poultry-keeping, more especially upon intensive lines, whether as stock breeders or for market requirements have regarded grass land as most desirable for their purpose, mainly by reason of the fact that pastures supply a large amount of green food, and also that the need for experience as to cropping and cultivation of the soil is obviated. Exceptions are, however, to be found. Where fruit is the first object and poultry supplemental thereto, the advantages of broken ground have been abundantly evident. It is about twenty-five years since I first called

enclosed in runs is within the knowledge of many. No such difficulty should arise when open fields are used in this way and portable houses employed. But we all know that, for some unexplained reason, when fowls are "yarded," to use an Americanism, the grass becomes coarse and grows in clumps, which are unsightly, and the herbage fails to completely utilise the manure. Such may be regarded as a sign that the time has come when removal is essential. Therefore, I beg to suggest that reconsideration of the whole question is desirable, and it is with that object in view that the subject is now submitted.

Intensification of poultry-keeping, by which



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POULTRY ON ARABLE LAND.

[Photo by Prof. Rice, Cornell University, U.S.A.]

attention to the combination of vine-growing and poultry-keeping found in the Medoc district of France, where the regular overturning of the earth provides a large amount of natural food for the fowls and utilises the manure produced by them to the fullest extent. Other instances have been given from time to time. Up to the present period those who have adopted this method of poultry-keeping—that is, the use of arable or dug land—have been chiefly fruit-growers, cottagers, and small occupiers with a very limited area of ground available. Some very striking cases have been published of success achieved by the combination named. That pasture land is not altogether satisfactory when birds have to be

is meant the maintenance of a much larger number of birds per acre than in ordinary farm operations, necessitates attention to many points not otherwise presenting themselves. Such intensification is essential to attainment of profit. A farmer can make his poultry pay well if he does not keep more than three or four birds per acre of his occupation. Under such conditions they form one item in the total production, and are an added crop. He has no rent to pay for them, and the labour can be fitted in with other work. But the specialist poultry-keeper cannot attain success in that manner, and, therefore, his stock must be, *pro rata*, much larger. He has to make the land yield a greatly increased return. Enhance-

ment of production in production involves the necessity for larger returns if the business is to be profitable. That question was fully dealt with by me in an article entitled "Poultry-Keeping as a Business," published in THE ILLUSTRATED POULTRY RECORD for May, 1909, and I need not enlarge upon it again.

WHAT INTENSIFICATION INVOLVES.

Two points must ever be kept in view by the poultry-keeper working upon the lines suggested above. The consumption of food is enhanced to a considerable extent owing to the fact that the natural supplies are rapidly exhausted where the number of fowls kept is greater than the land can provide for unless it be specially cultivated. Increased cost in feeding is thus involved, which explains why a farmer who keeps a moderate stock can feed much more cheaply than he who has to purchase the greater part of the food needed. It is the nutrition naturally obtained which makes the difference, often amounting to 2s. and more per hen per annum. The other point is that increase in the number of fowls kept per acre means commensurately greater production of manure. That is not alone a question of health, but also of money. The farmer does not need to trouble himself in this direction. Where the birds are well distributed the manure is at once absorbed and utilised by the land, which, as a rule, can take much more of it with advantage. So soon, however, as fowls are restricted and maintained constantly upon the same ground for a prolonged period, there is an accumulation of manurial elements which, when in excess of the plant capacity to use, make the soil not only fail to yield what the fowls require in the shape of food, but it becomes little better than a manure heap, and, therefore, a positive danger and the cause of disease. I am sorry to be compelled to say it, but, so far as pasture land is concerned, if not cultivated as intensively as the fowls are kept thereon, the time will assuredly come when the ground must have a prolonged period of freedom from the presence of stock. Much may be done to delay that result, but it cannot, so far as present knowledge and experience is available, be prevented.

NATURAL FOOD AND MANURE.

It this connection it is necessary to remember that the natural food of fowls consists of grub, worms, seeds, and vegetable growth, all of which are available in natural ground that has not been overrun, but more in arable than in pasture land, from the fact that the various foods named are more accessible. Supplied foods should be supplemental to these and not

take their place, which can only be the case so long as the number of birds is not beyond the capacity of the soil to maintain. This is not merely a question as to cost of feeding, though as explained above that is of great importance; the fowls will thrive much better and be more profitable if their natural instincts have full play. The exercise in seeking for these nutritious morsels is an essential factor in promotion of egg-production. On the other hand, the quantity of manure produced must be regarded. Experiments have shown that twenty-five good-sized fowls will produce a ton of moist manure in twelve months. How much an acre of land will absorb and utilise in the same period has never been determined—that is, to leave the soil at the end in pretty much the same condition as at the beginning. Such would be knowledge of the utmost value were it available, as it would help decide how many fowls could be kept to the acre. Moreover, there is a great difference in the nature of soils. We are, at any rate, on safe ground in stating that dug or ploughed ground can absorb much more



THE FORM OF HOUSE ILLUSTRATED ON PRECEDING PAGE. [Copyright.]

manure than pasture or meadow. In the past, little discrimination has been made, and with greater intensification there has not been a corresponding change in methods adopted.

POULTRY IN CORN DISTRICTS.

One sign of how wide-reaching is the opinion held as to pasture *versus* arable land for

poultry in this country is that the number of birds kept by farmers in the corn or otherwise cropped areas is much below the average of the pasture districts. The fear that fowls will damage growing crops exerts a repressive influence, although it has been abundantly

pastures, and has the further advantage of being thus able to use his fields for the poultry after the crops have been harvested at a time when they would be useless for larger stock. Under such conditions much in the shape of natural food that would be practically wasted



A POULTRY-RUN ON MISS GALBRAITH'S FARM AT BAGSHOT.
Over 60lb. of gooseberries were gathered in this run in one season.

[Copyright.]

proved that this is an erroneous idea. My observations in Belgium, Denmark, and elsewhere, as well as in our country, have shown that much larger flocks of poultry can be kept by arable farmers than has hitherto been thought possible. The opportunities for extension under such conditions are very great, but to carry out the work successfully methods must be adopted in accordance therewith. A corn or root grower would require to move his fowls less frequently than is essential upon

is transformed into hard cash, and the land is at the same time manured by the birds. Or, by the adoption of what is known as the Colony system, the farmer can devote one or more of his fields entirely to the poultry for, say, one year, and at the end of that period the soil will be in better condition for ordinary cultivation. It is in the last-named direction we look for a great extension of poultry-keeping within the arable sections of the country. This question is specially important in view of the

fact that there will probably be a considerable increase in the area of ploughed land within the next few years.

SMALL HOLDINGS.

The subject here brought forward is of even greater importance to small occupiers than it is to larger farmers, as the former must intensify if the business is to be profitable. The use of pasture land imposes severe limitations as to the number of birds which may be kept, and there is always a risk of overstocking, especially if there are other animals. In the chicken or duck raising districts this is not so great as where egg-production is the main object. The last-named involves keeping fowls all the year round, whereas with the former, the breeding stock is much less, and the ground is occupied by the maximum number for, say, half the year, or even less, so that the land has a rest. To such poultry-keepers arable land offers many advantages. As we have already seen, it provides a much larger amount of natural food, and has much greater absorbent qualities in the turning of manure into money, as well as obviating what is the *bête-noire* of the poultry-keeper—namely, tainted soil with resultant disease among the stock. It is interesting to note that one explanation of the remarkable developments of poultry-keeping on intensive lines in British Columbia and California, where this industry is growing by leaps and bounds, providing a source of livelihood for large numbers of people, is almost entirely upon arable land. It has been proved that under these conditions the greater number of fowls per acre necessary to secure an adequate return can be maintained in health and profit. Recently I had a conversation with a gentleman who has lately returned from Western Canada, where he has studied the methods of poultry-production on the Pacific Slope. The fact which impressed him most of all was the regular and systematic manner in which a balance of rotation between occupation by fowls and cultivation is maintained. The adoption of the portable house system on farms in this country had the effect of revolutionising practical poultry-keeping, and has enormously increased production. We have now to go one step further. By so doing the advance will, I submit, be even greater.

FENCING EXPENSIVE.

The less farmers and others use fenced runs the better. These are essential for specialists who must keep pens of birds separate for breeding purposes; but in their cases larger returns compensate for the additional cost. At the same time, it is always

wise for the farmer to have a few such runs available for the accommodation of selected specimens from which he desires to obtain eggs for hatching. These runs would only thus be occupied for three or four months in the year, and at other seasons will be found very useful for chickens when he does not want them scattered all over the place, more especially for keeping the two sexes separate. As a general rule, it is better that the general flocks shall have freedom. Thus the heavy cost of fencing will be avoided. Posts and wire-netting form expensive additions to the plant, but that is not all. They mean considerable labour in erection and are troublesome to remove, so that the temptation is very strong to use the enclosed ground much longer than is desirable. If an arrangement had been devised by which fences could be easily and quickly taken down and re-erected, the virtues of this system would recommend it to many; but that stage has not been arrived at as yet, except at a great initial cost. One supreme difficulty of fixed runs is that the plough cannot be used freely. As a result, fowls are seldom penned on arable land. Hand cultivation may pay the small occupier, but it is costly. Further, to leave houses and runs vacant during the period when the soil is under crops means capital lying idle. Stock-breeders and cottagers may by double runs minimise their lack of space and keep the earth in sweet condition, but, with the exception stated above, the less an ordinary farmer spends in erection of fences the greater his profit should be.

THE COLONY METHOD.

What is known as the Colony system offers, to the arable farmer especially, opportunities which as yet have not been realised. By that method his labour is minimised, the maximum of results with the minimum of expenditure on equipment is secured, all risk of tainted soil is avoided, and the land is prepared by manure from the fowls for cultivation in successive years. In the case of smaller occupiers who must work on intensive lines, the advantages are vastly greater. In fact, if poultry and egg-production is to be increased in accordance with the needs of our great population, this system is indispensable. A further point is that the houses need only be removed once a year, so that the work in that direction is much less than where portable houses on grass land are employed. It is always, however, wise to have a number of the latter for placing young chicks, &c., out on the stubbles or roots. To ensure the fullest success there must be regular rotation between cropping and occupation by the fowls, and also a limita-

tion of the periods in each direction. Upon good arable land as many as two hundred fowls may be kept per acre for one year, but at first it would be wise not to go to that extent. Even with one hundred per acre the returns should be sufficient to leave a good margin of profit. There is no reason that I can see why at least once during the twelve months the ground should not be ploughed over, which will have the advantage of bringing fresh soil to the surface and provide a further supply of natural food for the birds. For each hundred fowls four houses should be provided, preferably with netted fronts, and so built as to facilitate removal. In some districts it might be necessary to enclose the entire area occupied with wire-netting, but that would be much less expensive than are small runs. Where not absolutely required as a protective measure even that is not recommended.

THE CONCLUSION.

The use of arable land for poultry, under the conditions here described, would assuredly lead to a large increase of the poultry kept in many sections of the country, where development has been slower and less in evidence than elsewhere. It will increase enormously the productiveness of our land so far as ordinary crops are concerned, and also the home supply of eggs and poultry. Under proper management the total returns will be much larger than if pasture grass land is used. By the avoidance of disease which follows tainted soil as certain as night follows day, by which is meant manure-charged earth, and the lessened cost of feeding, due to the amount of natural food constituents thus made available, the profit will be considerably increased, and the Poultry Industry will make that advance which is imperatively needed.

WHY SHOULD POULTRY WAIT?

By J. W. HURST.



FOR the present purpose I use the word poultry in an exclusive sense. Eggs can for the moment be left to the care of the many who are ready and capable of looking after their interests.

I have been to the Poultry Conference, and have been much impressed with what I saw and heard in Dublin, both within and without the Aberdeen Hall—and the discussions were by no means confined to the scene of the sessions. I was impressed, for example, with the dignity of the industry to which the circumstances and surroundings directed particular attention in a manner that has never before been attained. I entirely agree with the leader writer in the *Irish Times* in his declaration that “the great value of the Conference lies chiefly in its impressive assertion of the immense importance, boundless prospects, and true economic dignity” of the industry. I can go with him when he adds that it will persuade many thousands that the industry is worthy of their highest efforts, but I am less satisfied when he concludes that “it will associate eggs with patriotism.” It was officially described as a “Conference on the Poultry

Industry,” but there was a general disposition to interpret poultry as eggs, and the proceedings were practically dominated by eggs.

The arrangement of the programme provided for a sufficient discussion of the problems of table-poultry as well as of egg-production, yet the interest of such a representative gathering was evidently centred in eggs. The greater importance of this branch may be very readily admitted, but the unimportance of meat-production cannot be allowed. No one will deny the difficulties in the way of an organised development of table-poultry production. I have consistently pointed them out, according to my knowledge and opportunity, but I do not think that they are insurmountable. I had looked to this Conference for some wisdom of suggestion from the concentrated experience which I supposed was present, and was correspondingly disappointed at the neglect of the opportunity. There are many reasons for caution and slow progress, but none for the shirking of the problems that await solution in this connection. During the discussions on the papers no suggestion of practical value was made with regard to the development of table-poultry production, beyond the broad principles that

apply to the industry as a whole, and were mainly appropriated to eggs; neither was there any attempt at a technical expansion of the idea conveyed in Sir Horace Plunkett's aspiration to "make two cocks crow where one crew before"—if that may be taken as an oblique reference to this aspect of the subject.

Here were gathered between two hundred and three hundred delegates representing all sorts of departmental, educational, co-operative, and trading interests throughout the United Kingdom, who conveyed to the newspaper reporter the dominant idea of eggs as almost the sole reason and topic of the Conference. It is easier to develop that which has already made promising growth, and to continue along the line of least resistance; but an impressive advocacy of the development of the "poultry industry" should give at least as adequate attention to table-poultry as to eggs.

After all, in reviewing the matter dispassionately and reflectively there is, perhaps, less cause for surprise than pain. Even the National Poultry Organisation Society has been so overburdened with eggs that a Federation is in process of formation to lighten the load, whilst the Utility Poultry Club is so absorbed in increasing laying powers that it has no time to look beyond the egg-basket. What the table-poultry industry really wants is the support of a club and the guidance of an organising body. There is not much common sense or economy of power and funds in the multiplying of societies, especially when suitable machinery already exists—but will it ever get sufficiently free from the clogging yolk of eggs to work efficiently and sufficiently for poultry? After all, why should the table-poultry industry remain in a state of expectation when there is no reasonable prospect of realisation? Any division of forces would be regrettable, but if there is to be any real development of the poultry industry, poultry must be included in the general scheme of operations. Without any wish to disparage the good work that has been done in connection with the egg industry—indeed, with every inclination to further it—I am very strongly of opinion that with so many eggs there should be some development of embryos. To amplify the old chestnut, it is necessary to remember that many foreign yolks are hatched and reared before we feel their influence. To lessen or remove that influence we must produce the best—nothing less will suffice. To produce the best we must not only know how, but must be enabled to do it with a minimum cost of production, and the supplementary cost must be reduced to the lowest figure. There are questions of breed and breeding, of rear-

ing and feeding, of equalised lean supplies and finished output, of collection and distribution—freight charges, commission charges, and all that appertains to marketing as well as marketableness. In short, the table-poultry industry wants practical education and efficient organisation.

It is quite true that the general principles of education and organisation were fully and ably dealt with at the Conference, but somehow there remained an overpowering sense of application to eggs, and I am endeavouring to suggest that the complete thought must of necessity involve table-poultry. In order to make myself clear, it very unfortunately happens that it is necessary to speak of the egg industry and the poultry industry, whereas the general description "poultry industry" should be sufficiently comprehensive. In theory "Poultry Conference" should be understandable without explanation, but in practice the chickens were lost among the eggs. We want a complete and self-contained industry in which the several branches shall be proportionate and complementary, but we shall never get the full and equal development so long as all the eggs go into one basket. There are also incubators to be filled and markets awaiting their production.

The figures on the table-poultry side are less sensational than when we talk of eggs, but we are all thinking about development—and who can foresee the result of well-directed effort? I am reminded that one result of increased production would be reduced values, but even so there are possibilities connected with the lowering of the cost of production and of marketing. In any case, if increase requires consideration, there is no occasion to think long about the need for improvement in the quality and preparation of the great bulk of dead poultry that now reaches our markets. In addition there are economic questions connected with such roughly organised industrial production as does exist that require careful handling, and it is easy to show how uneconomical are the methods in vogue as regards many important details. This side of production may not appeal to the imagination so fully as the other, but it is equally a matter of national importance. Large ideas and comprehensive are essential to the success of all national movements, but these must cover and include the technic and detail of the subject of large thoughts. In his paper on "The Promotion of Poultry-Keeping," Mr. Edward Brown made the very apposite remark that "unity of action is of primary importance"—an axiom that applies both to education and organisation. Combination, co-operation, unity

of action, a complete and undivided industry—these are the lines along which we must work, and along which a really successful development must progress. “This poor man’s industry,” said Sir Horace Plunkett, “is not free from the necessity for organisation which applies to every important industry under modern conditions. Indeed, I know no industry which more obviously depends for its prosperity upon the organisation of its producers.” He told us that the failure of poultry-keepers to adopt methods of organisation is the weak spot both in the industry and in the trade, and all who know anything about it know that you cannot touch table-poultry production without being right on the spot. It occupies the centre—the weakest and tenderest part of the spot.

Mr. Percy A. Francis told us about the Poultry Premium Stations, and hinted at Irish developments in the production of table-ducklings; and Mr. Nasmyth-Miller considers the rearing of table-poultry to be in itself of sufficient importance to demand serious attention and considerable extension. He also told us of Fattening Stations. But the remarks of both these gentlemen were relative to Ireland, which is in so many ways an example in poultry matters; but it must not be forgotten that we have to think in terms of the United Kingdom—a fact sometimes overlooked at the Conference. I am not out to make suggestions, but hope—as I hoped at Dublin—to hear some. It may be suggested, for example, that I exaggerate the neglect of table-poultry, and if I were prepared to admit this I should easily find my excuse in the magnification of eggs. Hitherto the two main branches of the industry have been viewed from opposite ends of the telescope, and at its best the instrument is not without its imperfections.

Relative to educative and experimental work, Mr. J. R. Campbell’s paper was avowedly confined to Irish conditions, but the subject was treated by Mr. Wil Brown upon a broader basis and from a more comprehensive standpoint. Yet where the speakers in the subsequent discussion particularised, they did so in eggs. Mr. D. S. Prentice certainly dealt with the transit of *live* poultry in his admirable paper, which was, however, confined to details of departmental work, and to that extent limited.

Organisation, the subject so ably handled by Messrs. J. Nugent Harris and R. A. Anderson, provided a great opportunity, but the references to table-poultry were of the most casual nature; the chief application was again to eggs, and the remaining subjects were the collection and grading of eggs and the sale of

eggs. Finally, the appendices to the book of papers had reference to the marketing of eggs, the purchase of hen eggs by weight, and standard egg cases. The preponderance of eggs is so great that there is some justification for the question—“Why should poultry wait?”

At the moment of writing, immediately after the Conference, the value of imported poultry since the beginning of the year has exceeded £500,000, and shows an increase of about £190,000 on the figures for the corresponding period last year. This may be considered a trifling matter, but the figures have their significance—representing, as they do, the import trade of approximately only one-third of the year; and it is evident that others, beside ourselves, have realised the possibilities of a Coronation season in London. I do not, however, propose to juggle with figures, which we all know can be made to prove most things, except the volume of the home production, but I do wish most emphatically to direct attention to the claims of the table-poultry industry—as regards chickens, ducklings, goslings, and turkeys; and this without abating by one jot the interest in eggs. I am equally interested in both, but the great majority do not appear to realise that the branches are correlative, and that the development of the whole industry is required. The experimentalist has an almost scientifically unexplored field for investigation in connection with table breeds and strains, feeding and fattening—with the cost of both; and practical tests in production upon a *commercial* basis are urgently needed.

At the present time, if we are going to develop, we require all the available information. Among other things we should know why the majority of the subsidised fattening stations have been discontinued, and what are the actual results of co-operative chicken production and fattening. These are but parts of the whole subject, but in so far as some experience exists its relation should prove beneficial. I do not know what definite action may be contemplated as a result of the Conference, but the reading of papers and the writing of articles is not all-sufficient, and I would suggest that the time is opportune for the devotion of expert attention to the development of the table-poultry branch of the industry in the United Kingdom. A concentration of the various interests is desirable, with a broad review of the whole situation and a practical knowledge of the economic details of the industry. I do not, however, anticipate any embarrassment of useful information if the general interest displayed at the Conference is any indication of what is available in this connection.

POULTRY THROUGH THE MICROSCOPE.

VIII.—THE CHEMISTRY OF ALBUMEN.

WRITTEN AND ILLUSTRATED BY JAMES SCOTT.



IN another article of this series I have dealt with the intricacies of egg chemistry as a whole. I there briefly alluded to the remarkable action of the albuminous ingredients of these objects under various conditions. It seems to me that this particular phase of the subject—that of the albumen or white—deserves extended description, because, although it strikes one as being a very simple substance, it is actually a compound of great complexity, and has not even yet been satisfactorily analysed and classified. It is true that it is regarded as the highest proteid—that is, muscle former, as distinct from flesh heater—but its study has repeatedly confounded many eminent chemists, who can say little more about it than is given in this article and the one to which reference has been made.

It would be interesting to follow my statements with personal experiments. First get

hanger in front of a clear, steady fire. Over the top of the jar lay a small square of glass, leaving a slight gap for convenience. During such a test the translucent white will gradually become opaque white, thus resembling the coagulated state found when albumen is boiled. Simultaneously, vapour will arise and condense into drops of water beneath the upper flat glass. Later on, when the chief amount of moisture has been extracted from the stiffening substance, the drops of liquid mentioned will disappear and leave behind them rings or patches of white residue, so faint and delicate as to appear to be unworthy of notice. Yet when any portion of such ash is magnified it stands forth in prettily arranged groups of atoms which assume patterns of the kind depicted in Fig. 1. The light is here represented as coming up from beneath the glass holding the trifling substance, so that the filigree shows black. With the light shining only from above the spectacle would be white on a dark ground.

These details have a significance apart from an æsthetic one, because they prove the presence of salts of an important character in the egg-white. These salts are obtainable in greater bulk by other means with which I will deal at a later stage.

A very curious fact came to my notice while I was examining these things. I had before me the glass slide from which I drew Fig. 1. Upon this I breathed merely for a second. Instantly all was changed, and confronting me were several tiny separated puddles of moisture—a few dozens in the space of a pinhole, and absolutely undetectable to the unaided sight. Gradually these evaporated, and there stood revealed in the place of the former sight a number of minute squares, rosette and star-shaped clusters, of the kind shown in the bottom right-hand corner of Fig. 1, these being on the other side of the slide, on the top of which the remainder lays.

The albumen in the jar, under continued heat, turns from white to brown, and thence to black. For procuring the incombustible coal-like result it is best to stir the fresh white with a small quantity of water, filter it, and then to neutralise it with acetic acid, afterwards liberally diluting it with plain water. An



Fig. 1.—A Magnified Pinhole. When vapour from heated egg-white is condensed and dried there remains a minute portion of ash, which is arranged in atoms as above. [Copyright

a glass jar about the size of those which hold a pound of jam. Into this pour the whites of one or two eggs. Then stand it on a

abundant flocculent precipitate, or deposit, occurs through this treatment, and if this is collected and washed over a filter such as one composed of pure blotting-paper, a perfect albumen remains. This latter is quite insoluble in water, but will dissolve in a weak solution of caustic alkali, such as soda. It has no taste or smell, and becomes horny if gently dried by heat. Ammoniacal vapours are



Fig. 2.—When a thin layer of albumen is dried on glass, so that a bead of substance is left in the middle, it appears as in this pinhole when magnified, showing flakes and feathery wrinkles. [Copyright

meantime exhaled. The sides of the jar become covered with filmy substance in which can be detected hosts of tiny glistening needles, these being really slender cracks. Sometimes, if the light is suitable, they exhibit a play of rainbow colours.

During my own experiments I leaned a microscopical glass slide 3in. long and 1in. wide in the albumen; this was gradually removed from the tilted position (when it rested against the jar) to an upright one as the albumen coagulated, browned, and charred, without being touched by hand.

Upon finally pulling it out and magnifying the matter upon it I found, at a point just above where the top of the albumen had been, several pretty rosette groups of particles. This is a hint for anyone possessing a microscope.

I next transferred a small quantity of white on to a slide by means of a camel's-hair paint-brush. This I stood in front of a glowing fire until it dried into thin film, except for a tiny middle bead that sparkled like a jewel. Upon magnifying this apparently insignificant

patch, which to the naked eye seemed to be a mere plain layer, it was disclosed as a number of figured plates, many of which had separated. In the first case the dried albumen is without fissure; then it contracts so strangely that it cracks picturesquely, and the divided portions still further shrink until they become individual flakes, with scrolls and leaflets upon—or, rather, in—them. The latter, also, are cracks. Here and there some faint circular lines, indicating the presence of former bubbles, can be seen. (See Fig. 2 for these details.)

The small bead remaining in the centre of the otherwise dry patch of albumen shrinks in such a way as to cause the substance to mimic foliage. In Fig. 2 the figuring contained in the curved portion to the right represents the folds in the dome-shaped remains of the bead mentioned, that section representing a portion of the bead. This is a more important phase than it may seem to be, and I have discussed it at length in a scientific journal dealing with a subject not connected in any way with eggs. It seems to me to be the origin of crystallisation. So far as the whole conduct of the film is concerned, it has a direct bearing on those who breed fowls, or use them for any edible purpose.

This phenomenon explains, for instance, that overheated albumen—in the incubator, say—tends to flake instead of remaining completely



Fig. 3—Egg albumen contains common salt, carbonate of soda, phosphate of soda, and sulphate of soda, which can be extracted from it in the way described in the text. Above, in a magnified pinhole, these salts, in crystallisation, are shown respectively in segments 1, 2, 3, and 4. [Copyright.

homogeneous. In the latter state it is better available for the perfecting chicken. It proves that even if the white in the shell could not reach the stiff, sharp-edged state depicted in Fig. 3 it might go irregularly into minute layers, of which some were harder than others. The difference would be, so far as the growing embryo were concerned, similar to that between overdone and properly cooked pie-crusts, in regard to ourselves. To the tiny germ in the egg these details would be vastly important. Indeed, it is the minute effects everywhere that are responsible for the large ones, on the principle that "many a mickle mak's a

muckle"—a principle with which the microscopist is pre-eminently familiar.

If the white of egg is slowly dried without burning, and is then pulverised and mixed with water, over a filter, its soluble salts are dissolved out and run through the filter. They can be later on obtained as powders by evaporating the solution so obtained. The salts include common salt, carbonate of soda, sulphate of soda, and phosphate of soda. Should the remaining softened, swollen mass of albumen on the filter be burnt to an ash, phosphate of lime—the principal ingredient of human and other animal bones—is left.

WHO'S WHO IN THE POULTRY WORLD.

CAPTAIN MAX DE BATHE.

AMONG exhibitors who are in the front rank of the poultry Fancy with certain breeds at the present time, it is questionable if any can claim to have reached that position quicker than the subject of this brief sketch. It is little more than two years since Captain Max de Bathe started keeping exhibition poultry, yet in this short time birds from his yards at Hartley Court, Reading, have won premier awards at shows not only in England, but in France, Germany, Belgium, and Holland. One could understand this, perhaps, if Captain de Bathe had speculated to a large extent in specimens solely for show purposes and had employed a paid manager or head poultryman to look after the birds and take them to the exhibitions. But such is not the case; the start was made with stock poultry for breeding purposes, and he never employed, nor does he now employ, a paid manager, since from the first he has not only supervised the entire work of his farm, but he has taken a hand in every detail. And added to this he is a soldier to his finger tips and a man of almost tireless energy of mind and body. No wonder, then, that his success as a poultry breeder and fancier has been rapid.

Son of the late General Sir Henry de Bathe, Bart., K.C.B., he enlisted in the 18th Hussars and got his commission in the 8th Hussars, and it may be added that he saw service in India, on the West Coast of Africa, and in South Africa, being, in fact, in the siege of Ladysmith during the last Boer War, and for which he has medals. And since the first five years of his service were passed in the ranks, it can be imagined that his experience is by no means a cramped one. He has made a tour round the world, and before settling down to poultry fancying he shot big game in India, Africa, and Alaska. He also owned some good steeplechasers, and at times rode them to victory himself.

It is as a poultry fancier, however, that Captain de Bathe is best known to readers of the ILLUSTRATED POULTRY RECORD, and there is none keener than he on the subject. The breeds kept at Hartley Court are White, Spangled, and Jubilee Orpingtons, Black Minorcas, Buff

Orpington ducks, and White turkeys. Of the fowls he predicts a great future for the Jubilee Orpingtons, while of the Buff Orpington



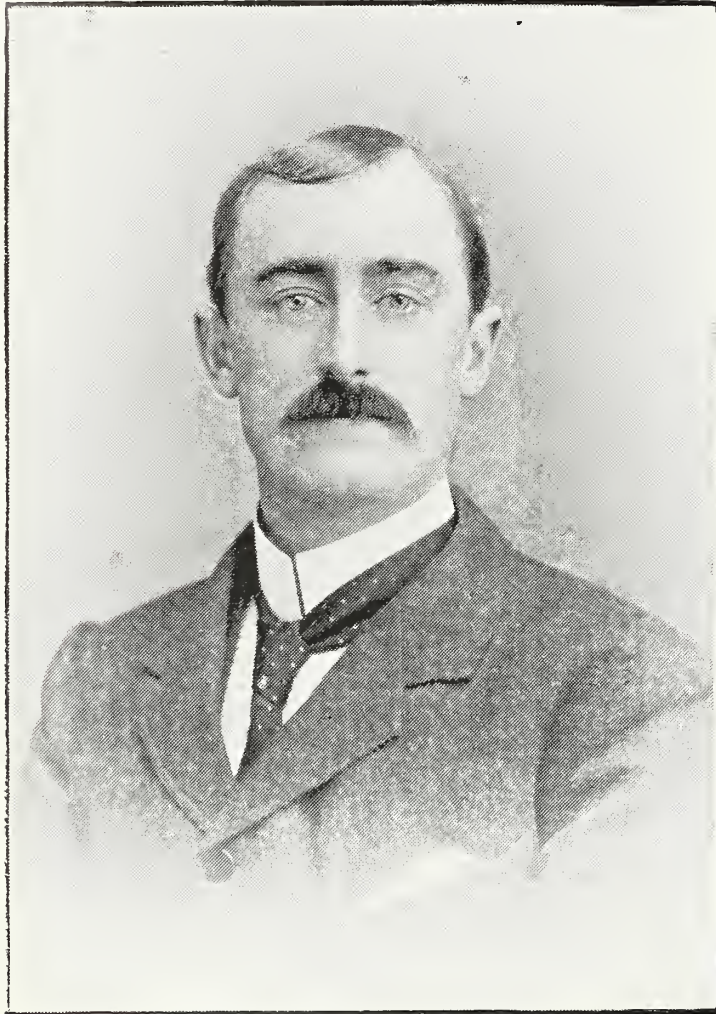
CAPTAIN M. DE BATHE.

duck he contends that in a few years, when people realise its value and laying powers, it will be the most popular variety of waterfowl kept in this country.

Captain de Bathe is vice-president of many specialist clubs, in addition to being a member of the Poultry Club, the Dutch Orpington Club, and the Société des Aviculteurs Français.

MR. J. W. P. CUSSONS.

IT is now about twenty-five years since Mr. J. W. P. Cussons first took up the breeding of exhibition birds. His first venture was with Barred Rocks and Aylesbury Ducks; with the latter he was very successful, and won at all the shows in the North with them in the days when the late James Dixon and Henry Beldon acted as judges. Owing to his business taking up too much of his

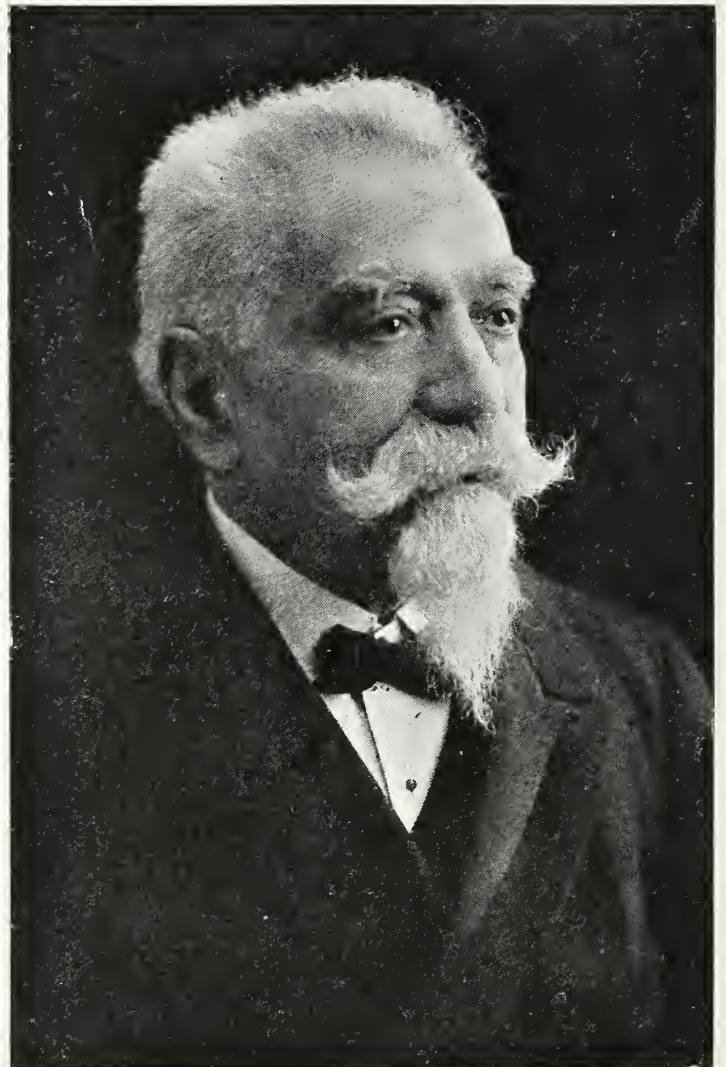


MR. J. W. P. CUSSONS,

time he had to give up breeding, and did not keep a bird again until four years ago, when, as a result of the weak state of his health, he was ordered to look out for some light occupation. He then took up Buff Orpingtons, and, being a believer in the best, he went to the fountain-head and procured the best money could buy. In his first year he bred a second prize winner in the Novice Class, and the following year was still more successful. He won Cup, first cocks and first hens, in Novice Class at Hayward's Heath, and first and Cup Novice Class at the Crystal Palace. This bird now heads his breeding-pens, and is admitted by some Orpington judges to be one of the best living to-day. Mr. Cussons has now moved to larger premises, where he specialises in Buff, Black, and White Orpingtons and White Wyandottes, not forgetting the utility side. A miller by trade, Mr. Cussons is deeply interested in the question of feeding; as a matter of fact, he specialises in poultry foods.

SENATOR TOMMASO VILLA.

BORN in the district of Osti, Signor Tommaso Villa, the President of the Executive Committee of the Great International Exhibition of Industry and Labour at Turin, is a man who has done great services for his country. During the last fifty years, in the Legislative Assemblies, as Minister of the Interior and of Justice (Home Office) and President of the Chamber of Commerce, he has acquired an undisputed right to the gratitude of the Italian people. His name is associated with many good works in Turin, and he is the head of numerous charities. This 1911 International Exhibition is the fourth of the same nature that he has engineered in Turin, and to help in it he appeals to the patriotism of the citizens, and does not appeal in vain. He is a strong supporter of the International Gymnastic Competition, and the Organising Committee is assured of splendid success in its campaign for the education in physical



SENATOR TOMMASO VILLA.

culture of the world. Having a strong will, Signor Villa's character has been rendered stronger during the great Italian *épopée*, and he has never permitted difficulties to interfere with his duty to his country.

THE SUMMER SHOWS.

By WILFRID H. G. EWART.

CLOSE as we are to the summer season, many points of surpassing interest and importance arise with regard to the summer shows. There are prospects to consider, plans to be made, and a great deal of definite hard work to be immediately done. To my mind, this is the busiest—and at the same time the pleasantest—of seasons for the fancier because he has on hand a large number of chickens at various and important stages, some being in exhibition trim, and also he has numerous old birds out of the breeding-pens which he may require either to produce eggs or to win prizes. It is a busy time, and a time of keen interest and pleasure to the amateur who finds his way about the earlier shows.

Summer shows! The words conjure up a vision of the strong heat of a summer day and of the typical, popular agricultural event. Who has not experienced the hot and breathless afternoon, with its rather sleepy rhythm of moving crowds, of jumping here and judging there, and the ceaseless bray of a bad brass band? Who does not know that poultry tent very particularly hot and uncomfortable to its gasping contents? It would be wrong to say that all are alike in this respect, but I do lament the general poverty of fresh air in these places.

We find long, enclosed tents containing an enormous number of people and a great many large fowls, and at one end we find a small opening which is expected to provide both ingress and egress—and air. We find, certainly, ventilation around the “eaves” of the tent, but this is by no means enough. What really is required at poultry displays which are held in connection with agricultural fixtures is a broad (rather than a long) tent, as high as may be, with an entirely open front. This latter is the point, for if it were insisted upon I have no doubt whatever that both exhibits and show-goers would greatly benefit. When we find ourselves thoroughly uncomfortable, and see our birds panting for breath with drooping wings and tail, pale combs and faces, and crops overful of water, we feel anxious and discouraged. And with very good reason.

Under present conditions nothing in the whole category of technical mistakes is calculated to ruin a bird so quickly, or, to put it so completely out of condition, as the summer show. Perhaps the best testimony to this is the really shocking condition of some of the adult exhibits which win about the country. Practically moulting and bereft of every vestige of bloom, whether of feather or head points, they are little better than exhibition automatons whose only merit is size, the fine markings, or the sound colour. With chickens signs of wear and tear are not so obvious, for at this time they still bear the bloom of youth. Moreover, they are not shown to distraction as are their elder brethren, but, to some extent, more carefully handled. Nevertheless, I repeat it is a mighty dangerous thing to send a really promising chicken to a summer show of the usual type. Many large breeders keep such with a view to the spoils of autumn, and their exhibition chickens are of the precocious, over-developed kind which are spurious champions in the sense that their value is but transitory.

With regard to selecting chickens for the show-pen, chief attention must, of course, be paid to forwardness—by which is not meant, however, forwardness of head points, but actual growth and bodily development. To my eye the birds that win the most prizes in chicken classes are well though not excessively developed—*i.e.*, not out of proportion in any particular. A cockerel shown, say, in June would not have a tail nor a full flow of hackle and saddle feathers nor full head points;



A HOUSTAN PULLET.

but it would possess the curves and the distinguishing shape of an adult, thus indicating its type. Again, it is a great thing to catch the chicken in the actual and genuine bloom of youth when looking and feeling its best. The great difficulty invariably experienced in exhibiting young stock is to get them to stand and hold themselves properly. When first you put a chicken in a training-pen it appears so utterly hopeless and dejected that you are tempted to straightway take it out again. Some birds never will do themselves justice, but persistently stand tail on ground, head on breast—pictures of misery. Others improve vastly in the course of a day or two, and, with a little patient training, display themselves, if not well, at all events, tolerably.

In most cases, the best method of training is to attract the bird as often as possible to the front of the pen by holding small pieces of meat or meal

well above its head. The chicken soon gets into the habit of coming to the front when one approaches and of holding itself erect as every well-trained specimen should.

But quite as profitable as exhibiting chickens, and scarcely so much trouble, is the showing of second-season fowls at the larger summer fixtures. If you win fairly frequently at these you will find a most consistent and satisfactory demand for young stock during the last four months of the year, for people scan the lists of summer prize-winners very carefully, and they remember the name of the man who shows good old birds at that time.

Now it is that the late-hatched 1910 cockerels and pullets which at one moment seemed sadly in the way come into their own. Too young for breeding, and matured after the close of the principal sales season, they should now be in good condition—that is, if the best have been fairly shaded through the stormy months. Such birds (provided they have quality) will readily defeat the ancient, worn-out slaves which so often appropriate the honours in adult classes. The right thing to do is to pen them in a covered run on grass and proceed to feed them up, giving plenty of green-bone, greenstuff, and, best of all, a bread-and-milk breakfast. Three weeks of this will do them no end of good, and if not quite in the pink of condition, they will at all events be bright and fit with a view to duty during June, July, and August.

POULTRY AT AN CLACHAN.

“AN CLACHAN,” the Highland Village at the Exhibition in Glasgow, will secure a very large number of visitors during the summer, and should arouse a great “interest in the Highland people, in their traditions and their customs in their beautiful Gaelic language, literature, and music, and their distinctive Celtic art.” The village comprises old-fashioned thatched cottages and the more up-to-date crofter house, the village inn, and the post-office.

As part and parcel of the crofter's life is the keeping of poultry, it has been decided to have a small exhibition of birds in the village. To this end the Department of Poultry Husbandry of the West of Scotland Agricultural College is sending a small pen of breeding-birds—namely, Black Leg-horns, as being suitable to the climate and local conditions of the Highlands and Islands—housed in a semi-open-fronted poultry house. In addition there will be a coop containing a hen with her brood, these being renewed every ten days or two weeks, so that young chickens will always be in evidence. A special leaflet has been written dealing with Highland poultry-keeping, and these will be distributed during the run of the Exhibition.

Unfortunately, all the exhibits were not ready by the opening day, but these will be added to from time to time. Samples of Highland eggs packed in the old-fashioned bad manner will be shown alongside those prepared for market in the best and most up-to-date way. It is hoped, also, that from time to time lectures and addresses will be delivered on poultry-keeping, and endeavours are being put forward to secure films that can be shown in the lecture hall at the cinematograph entertainments that are being organised.

THE FANCY AND THE POPULARITY OF BREEDS.

By A. T. JOHNSON.

IF the estimate of a breed's usefulness may be measured by its popularity in the show-pen, there are many varieties to-day which must be shelved by the ambitious poultry-keeper as wanting in those qualities which go to ensure success. But it may be urged, and perhaps rightly so in some instances, that the economic value of a breed is not determined by fanciers and show promoters, and that the latter, as a class, have done more harm than good to our poultry from a utilitarian's point of view. The fact, nevertheless, remains that the most popular breed of any given period is invariably that which the Fancy has adopted, and, whatever the arguments brought against the promotion of exhibition stock by the utility poultry-keepers may amount to, it is common knowledge that a breed, when once it has gone out of popular favour as a fancy fowl, rapidly diminishes in numbers—and often in quality—towards extinction. It is just the same in the realm of horticulture or agriculture. Remove the influence often sneeringly referred to as “the Fancy,” and deterioration sets in. There is a marked retrogression to some earlier type.

There are some notable exceptions to this, I am aware, in the persons of breeders who have made the perfecting of one variety of fowl, from a laying or other economic standpoint, a life study without ever winning a prize or attempting to do so in a fancy show. But these *are* the exceptions, and there is not one poultry-keeper in a hundred who can afford to isolate himself from the fashion of the day—not one in a hundred who has the ability, capital, and personality to run contrary to the times. The slur that utility breeders often cast upon fanciers—viz., that the latter are ruining their breeds of poultry—is not substantiated by facts, for we notice that in the laying competitions it is the popular fancy breeds which are not only numerically the strongest, but which win the prizes as the best layers. Sometimes these highly-developed egg-producers are not directly the product of a fancier's yards, but they came originally from them.

It is the fancier who has given us the Orpingtons and the Wyandottes in all their multifarious varieties, and it is the fancier who has saved many a useful breed from extinction. He knows quite well that it is not much use bringing out a breed these days unless it has some economic property to support it. The utility poultry-keepers of the country are, indirectly, the fancier's best customers, since they buy that enormous percentage of young birds which are not good enough, from a Fancy standpoint, to keep and yet are too good to kill. Nine-tenths of our small poultry-keepers—and they form a very large body in themselves—who keep one or two breeds both for a hobby and for utility purposes get their stock direct from the large breeders and exhibitors. They choose, if they are wise, a popular variety if they want to indulge in a little showing and sell a few sittings of eggs, and I do not think they are generally disappointed if they go to breeders of repute and pay a fair price.

That line of demarcation which is supposed to

exist between Fancy and utility stock is not nearly so evident as it used to be, even in the eyes of prejudiced persons. For, strong as the Fancy is, it could not flourish as it does if it were not for the commercial side of the industry, and, as I have shown, it is always the most vigorous when it is infused with a strong blend of utility features. The reader must not imagine that I hold a brief on behalf of the Fancy. Rather I would endeavour to point out that it is not so black as it is painted by some people, and that the most promising condition of affairs is that in which both the Fancy and utility poultry-keeping are infused one with the other.

The fancier, for example, has been accused of ruining the Minorca by excessive breeding for head points; and while I fully admit it to be true regarding some strains, the Minorca, on the whole, is now suffering from a passing phase of unpopularity which is neither its own nor anybody's fault. Breeds rise and fall in public favour, often through no apparent reason, or a new variety is brought out, and, very naturally, if it has good qualities, everybody rushes for it, just as they do for a new kind of potato or the most recently introduced tomato. Thus the Black Leghorn has very largely superseded the old White variety; the Partridge and Black Wyandottes have almost swamped their predecessors; the Buff Orpington has far outstripped the earlier Black variety in the race for popularity.

The Plymouth Rock was at one time a greater favourite with exhibitors than it is to-day, though it still has many doughty champions. At the same period it enjoyed a more universal favour with utilitarians than it now does, and the poor fancier has here, once more, been accused of spoliation. But I do not believe the Plymouth Rock is a worse layer to-day than it was, nor a worse table-fowl. In fact, it is probably a good deal better; only there are some breeds, of later introduction, which are better still, and it is on that account that we may often unjustly accuse the Plymouth Rock of deterioration. Furthermore, we must ever remember that, numerically, the Plymouth Rock is to-day hopelessly inferior to, say, the White Wyandotte. There is, perhaps, only one strain of the former to twenty of the latter. Is it not easy to understand, therefore, that, were the Plymouth Rock as numerous as the Wyandotte, it might yield out of its multitudes some "record layers"? The one has been given a chance; the other has not.

We can, with perfect justice, look upon the Plymouth Rock, the Minorca, or any other fowl which has once proved its worth as a latent possibility full of promise for the speculating breeder. Do not those utility poultry-keepers who have "specialised" in Minorcas (or any other comparatively unpopular show breed) during the past ten years or so, irrespective of whether their favourites filled the classes at shows or not, prove the truth of my assertion? The example set by these people is a most worthy one, which more commercial poultry-keepers might study. Rather than cry out against the fancier for the alleged spoliation of breeds, why does not the utilitarian more frequently get strains of his own and stick to them? If the fancier desires to exercise his scientific skill in the production of "feathers" and "points" he has every right to do so. The utilitarian has his remedy. Why does he not show his independence instead of complaining like a child over a broken toy?

POULTRY PARLIAMENT AT DUBLIN.

By A MEMBER.

AS the programme was given fully in the last issue of the *POULTRY RECORD*, it is unnecessary to repeat the details, which were carried out in full. My purpose is to convey some of the impressions received, recommending all who can do so to study the official report when published. Suffice it to say that the meetings were held on May 4 and 5, in the Aberdeen Hall, within the Gresham Hotel; that about two hundred and fifty delegates attended from every part of the kingdom, of whom about sixty were from Britain; that several Government departments, various agricultural colleges, the leading utility poultry and organisation societies, many co-operative societies, and a large number of traders came together with a practical object, the furtherance and development of the poultry industry, which is the interest of all. The Irish County Committees were represented, and thirty-three of the poultry instructresses attended, but so far as I am aware no British County Council sent a delegate. That was a notable fact, which the Board of Education should remember.

Poultry in Ireland has come to its own. That was attested by the welcome given by the Lord-Lieutenant, who was accompanied by the Countess of Aberdeen, supported by the Viceregal staff. His Excellency has for many years taken a deep interest in poultry, and his words were of the warmest, showing that he appreciated the work that has been and may be done. Lord Aberdeen remained throughout the morning session, listening with great interest to the discussion on the first papers. Lady Aberdeen was present all the first day and the greater portion of the second.

The first chairman was the Right Hon. T. W. Russell, Vice-President of the Department of Agriculture, whose opening address was indeed remarkable for the record given as to the growth of the poultry industry in Ireland. The statistics submitted, showing that poultry products exported to Britain have advanced in value from £2,850,303 in 1904 to £3,703,633 in 1910, is the best proof of success, and a justification for the policy adopted by the Irish Department of Agriculture. As Mr. Russell said: "The habit oftentimes was to deride and make little of these smaller operations, carried on, as they frequently were, in a modest and unbusiness-like way. It was not so long ago since Irish farmers treated eggs as a negligible product of the farm—since even public men jeered at that rising and growing industry." The entire address was charged with facts which impressed us all.

The two papers dealt with in this session were upon "Education and Experimental Work." The first, by Mr. J. R. Campbell, B.Sc., whose absence through illness was generally regretted, told the story of what has been done in Ireland since 1900, showing the plan of operations. It deserves careful study. One point impressed itself—namely, that the central authority has succeeded in bringing into line the county committees, and secured unity of action over the entire country. The success achieved is attributed by Mr. Campbell to the following circumstances:

The initial care and thought bestowed upon organisation; the absolute rigidity of the Department

in refusing to recognise any but properly qualified teachers; the combination of practical demonstrations with technical instruction, no county being allowed to have an instructor without the demonstration farm, or the demonstration farm without the instructor; the strict supervision by the Department's Inspectors over every branch of the work; and, finally, to the sustained endeavour by the Department and the absence of anything spasmodic.

The second paper, by Mr. Wil Brown, Lecturer in Poultry-Keeping, West of Scotland Agricultural College, applied itself more especially to the needs of Great Britain, and treated the subject very broadly. Rural elementary schools, county schemes, college teaching and experimental work, and research all came under review. It is impossible to summarise this valuable and constructive paper, which, it may be hoped, will receive the attention it deserves from central and local authorities. In fact, it was evidently intended more for these than ordinary poultry-keepers.

In the discussion which followed, emphasis was given to one point raised by Mr. Wil Brown—namely, the importance of practical teaching:

It is impossible to place too much emphasis on the fact that the practical teaching of definite methods and systems on farms of a county produces more lasting and beneficial results than do a large number of lectures.

That lectures have a place is unquestionable in the initial stages, but must be followed by tutorial and practical classes. Full recognition was given to the importance of experimental work, in which all the United Kingdom, inclusive of Ireland, is so lamentably deficient. Mr. Frederick Verney (N.P.O.S.) made an important point which deserves consideration—namely, that in a Free Trade country it is especially necessary that agricultural education of the highest order should be provided to enable producers to meet foreign competition. And the Rev. Canon Dwyer urged that poultry-keeping should be promoted as a remedy for emigration.

The second session was presided over by Mr. T. P. Gill, Secretary of the Irish Department of Agriculture, who in his opening address referred to the fulfilment of anticipations made many years ago. As to the influence upon the prosperity of the country, he said:

This was an industry which gave the farmers' daughters healthy and remunerative employment, and which, as the Department are aware, in many instances is yielding on small farms returns of from £20 to £60 per annum. In many cases, indeed, the receipts from eggs had been sufficient to pay the rent and also provide the household with groceries. He thoroughly agreed with what had been said as to the need of raising up in these countries an opinion of the national importance and dignity of this industry.

Two papers were submitted on "The Promotion of Poultry-Keeping," by Mr. Edward Brown, F.L.S. (Hon. Sec. N.P.O.S.), and Mr. P. A. Francis, Superintending Poultry Instructor of the Department, which were on somewhat similar lines. The latter was specially concerned with Ireland. Mr. Brown took a wider outlook, foreshadowing the directions in which developments may be secured in view of the need for increased home production as a result of decreasing foreign supplies of eggs

and poultry. He advocated earnest efforts for improvement of existing stock of poultry apart from greater numbers, and stated that better results would be secured by keeping one breed in given areas; that hatching centres should be established; that open-fronted houses be employed; that laying competitions receive adequate support from public funds; that attention should be given to production of winter fowls, and that eggs might be manufactured into saleable food products.

The discussion which followed was very interesting, and Mr. W. Reynolds, of Street, gave an account of the hatching centre there. The Right Hon. T. W. Russell expressed the hope that money would be obtained from the Development Fund for investigation of disease.

Papers followed by Mr. F. B. Nasmyth-Miller, Poultry Overseer, Department of Agriculture, specially with reference to Ireland, and Mr. J. W. Hurst, of Brighton, giving Sussex experience as to "Production of and Trade in Table Poultry," and on "The Transit of Eggs and Live Poultry," by Mr. D. S. Prentice, of the Department, the last-named of which described the methods adopted by that body to secure better packages and obtain greater facilities from the railway companies.

The second day's proceedings opened with a hearty telegram from Lord Carrington, President of the Board of Agriculture, wishing success to the conference. Sir Horace Plunkett, whose welcome showed how his great work for the regeneration of Ireland is appreciated, was in the chair, and his address was masterly. I can only make one quotation:

The poultry industry is the very opposite of a monopoly. It has never been, and never can be, in a few hands. Even in America we do not hear of egg and poultry combines. But this poor man's industry is not free from the necessity for organisation which applies to every important industry under modern conditions. Indeed, I know no industry which more obviously depends for its prosperity upon the organisation of the producers.

Mr. J. Nugent Harris (Secretary Agricultural Organisation Society) and Mr. R. A. Anderson (Secretary Irish Agricultural Organisation Society) submitted papers on "Organisation," telling the story of what has been done on both sides of the Irish Sea. They stated some of the difficulties which had to be met by irregularity of supply and bad methods.

The discussions which arose were interesting and sometimes lively. Co-operators and traders defended with animation their own views. It was evident that conditions in England and Ireland are totally different. In the former the object has been to get into direct communication with retailers, whereas wholesale men are a necessity to Irish Co-operative Societies and shippers. The Countess of Aberdeen spoke as to the importance of helping individual producers, and said that the Women's National Health Association were keenly concerned in the poultry industry. Mr. Geo. Little (Manchester) said that:

There was no cause for pessimism in regard to the amount of trade which Ireland did with England in eggs. That trade was a tribute to the efforts of those who had laboured in the past to advance its interests.

The afternoon sitting was presided over by Sir

Matthew G. Wallace, President of the Scottish Chamber of Agriculture, who extended an invitation for the next meeting to be held in Scotland.

The papers were on "The Collection and Grading of Eggs," by Mr. John Drysdale (Sec. Scottish Agricultural Organisation Society) and Mr. T. S. Porter (Agricultural Inspector of the Irish Department); and on "The Sale of Eggs," by Mr. P. Hickey and Mr. L. Wilson, both of Manchester, who dealt with the question from the selling end, urging the proper packing and improvement in respect to quality. The discussion in each case was healthy in the extreme, and I cannot but feel that one result will be to bring producers and traders closer together by a clearer understanding of each other's position.

At the conclusion of the conference, Mr. Edward Brown, F.L.S., proposed a vote of thanks to the Lord-Lieutenant and the Countess of Aberdeen for their kindness towards the members of the confer-

POULTRY TEACHING IN PRUSSIAN SAXONY.

THE CENTRAL STATION AT CROLLWITZ.

By HERR FELIX ALBRECHT

(Assistant-Director, Zentral Geflügelzuchtanstalt, Crollwitz).

IN 1896 the Poultry Breeders' Association for the Province of Saxony induced the Chamber of Agriculture to establish an institution for teaching and experimental work, which should serve as a centre for all other provincial stations formed for the same purpose. After two years' consideration and much discussion the project materialised. Sufficient capital for building the station was provided by the State and Provincial authorities, to be redeemed in a given period of time, and the land was given by the local body concerned. The site



THE POULTRY BUILDINGS AT CROLLWITZ.

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ence, and the interest which they had displayed in the work of the conference, even before its commencement. He hoped that everyone present would realise what had been said and done by their Excellencies, and that they would convey to them their heartfelt thanks. They also wished to thank the Department of Agriculture and Technical Instruction of Ireland and its Vice-President and his colleagues. He concluded by moving a vote of thanks to their Excellencies and the heads of the Department for their action in regard to the conference.

The vote of thanks was seconded by Mr. Esslemont, Aberdeen and North of Scotland Agricultural College, and was passed with acclamation.

An excellent display was made of packing cases, recommended by the Department, of those made by the Street Collecting Depot, and Mr. T. P. Bethell, of Liverpool, of eggs and dead poultry and various appliances, which commanded a great amount of attention.

selected was in a little village named Crollwitz, on the outskirts of the famous University town, Halle, on the River Saale, from which there is an excellent tramway service. The area occupied is six hectares (about sixteen acres). The Provincial Chamber of Agriculture is proprietor of the entire establishment, whose value is declared to be 95,000 marks (£4,750), exclusive of the stock and movable equipment. The land is poor in quality, mainly sand, and could only be used for sheep, though not of much use even in that direction. It is uneven, and mainly covered with birch trees and pines, but fruit has been freely planted. From its position, sloping to the south, the drainage is excellent, and there are two large ponds, so that it is most suitable for poultry and ducks.

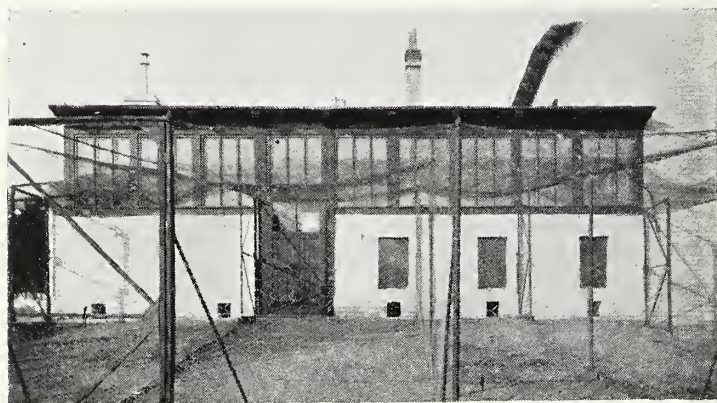
The aims of this institution are to breed poultry of a class suitable for farmers and others, more especially in the Province of Prussian Saxony, and to develop a system of poultry-breeding on rational lines, which would be impossible without instruction

and example. Every year about 12,000 eggs for hatching and 1,000 fowls are sold, the influence of which is very great in improvement of the poultry generally found. It has ever been kept in view to send out birds that are at once vigorous and prolific.

The breeding stock at the present time consists of about two hundred Partridge Italiens (Leg-horns), sixty Ramelsloher, sixty Black Minorcas, sixty White Wyandottes, and twenty Coucou de Malines. Two new types have been created here, one for flesh production and as mothers—namely, the Crollwitz table-fowl, due to a cross between the Lincolnshire Buff and the Huttegem, of which a stock of about one hundred and twenty breeders are kept—and another race called the Crollwitz layers, coloured in plumage like the Braekel, formed by a cross between the Italian and Ramelsloher. This breed, of which about sixty adult stock are maintained, is very popular in the province. The stock of ducks consists of forty Pekins, twenty Aylesburys, and twenty Crollwitz, the last-named of which, a cross between Pekin, Aylesbury, and Indian Runner, has been found very valuable by farmers. There is also a cross between tame and wild duck, which fly very well indeed. The geese are local, resultant from a mixture of the Diepholz and Pomeranians. Of turkeys about twenty are kept, mainly due to the mating of a Rouquières (Belgian) cock with light-coloured German copper hens. It will be seen, therefore, that the practical qualities are kept always to the fore. A flock of about fifty pigeons is maintained.

The principal work, however, of the station is instruction. Annually in the month of March a course is held for women, chiefly the daughters and housekeepers of farmers. In the autumn these students return for a few days' training in fattening and preparing table-poultry for sale. During April in each year a fourteen days' course is provided for teachers from other provinces, who may act as

advisers in poultry-keeping within their own districts. Last year the institution had two courses in rural economy, at which one hundred teachers attended. The Chamber of Agriculture, in addition to the above, gives considerable attention to forestry and fruit-growing in association with poultry-keeping, and conferences with demonstrations are frequently held. Many ladies attend to gain experience, and most of these are teachers, whilst the

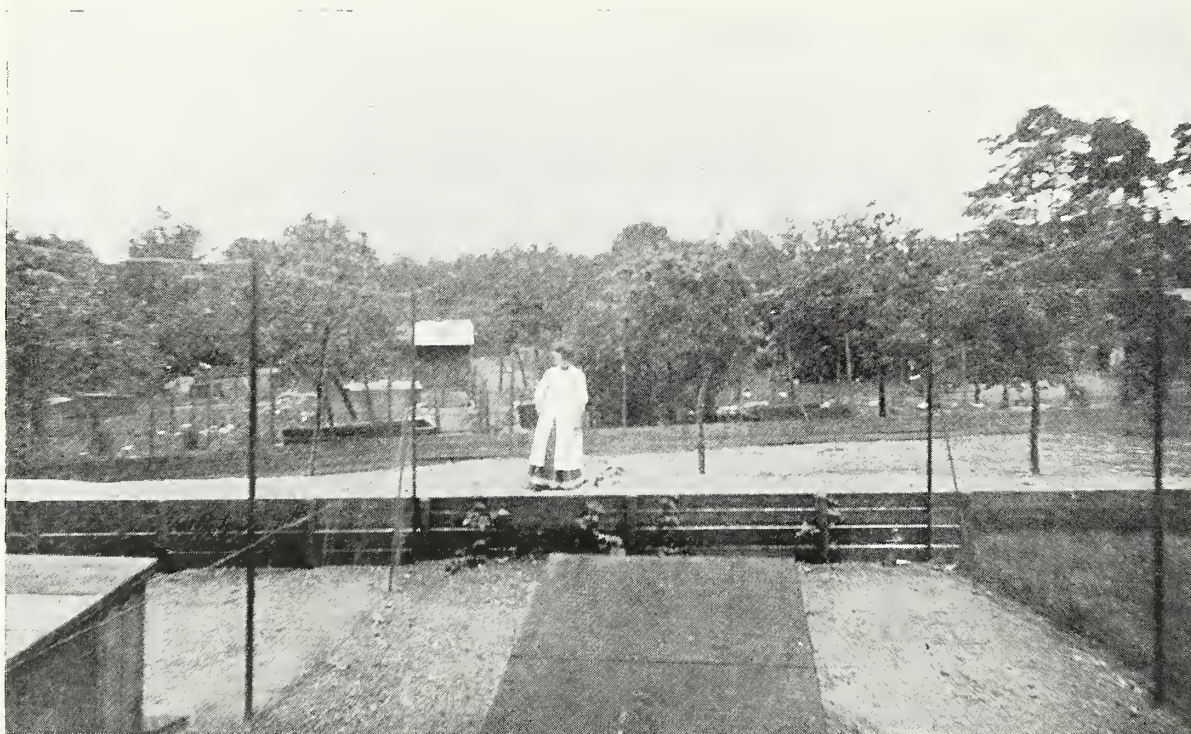


BROODING-HOUSE AT CROLLWITZ.

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Government frequently send students for special courses of study. The Director, Professor Beeck, is lecturer in Poultry at the Halle University, whose agricultural students come here for lectures and demonstrations.

A great amount of attention is given to experimental work, more especially in relation to the problems of artificial incubation. Every year the station receives a number of incubators and brooders to be tested. Careful and prolonged experiments are undertaken in respect to the feeding of poultry, housing, fertility, and prolificacy of the



GENERAL VIEW OF POULTRY-RUNS AT CROLLWITZ.

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various breeds, and in cross-breeding. As the Director is at the same time an itinerant lecturer and poultry adviser in the province, he is the connecting link between the institution and farmers. From this work much good has resulted. Several farmers have realised as much as 2,000 marks (£100) per annum from their fowls, although often all the food was purchased and the poultry were subordinate to the general work of their respective farms.

The staff consists of the Director, an Assistant Director, a Student Demonstrator, two labourers, and from April to July a girl is specially engaged. Letters of inquiry are received to the number of 4,000 annually, requiring a similar number of replies.

As already mentioned, one of the chief aims of the institution is improvement of the class of poultry kept in the Province, to which end eggs for hatching and stock birds are sold at cheap prices. The rates are: Hen eggs, 20 pfg. ($2\frac{1}{2}$ d.) each; duck eggs, 30 pfg. ($3\frac{3}{4}$ d.) each; turkey eggs, 75 pfg. (9d.) each; and goose eggs, 1 mark (1s.) each. Chickens, several days old, sell at 60 pfg. ($7\frac{1}{2}$ d.) each; ducklings, 90 pfg. ($10\frac{3}{4}$ d.) each; turkey poults, 1 m. 25 pfg. (1s. 3d.) each; and goslings, 1 m. 78 pfg. (1s. 9d.) each. Adult fowls for breeding are sold at 3 m. 50 pfg. to 10 marks (3s. 6d. to 10s.) each; ducks, 4 m. 50 pfg. to 10 marks (4s. 6d. to 10s.) each; and turkeys are sold by weight, 2 m. 50 pfg. (2s. 6d.) the kilo (2 1-3lb.); pigeons at 2 marks (2s.) the pair.

THE POULTRY INDUSTRY IN AMERICA.

MR. T. ANDERSON, who is evidently a Scotsman living in the United States, has been giving in the *Dundee Advertiser* his experience on the poultry industry in America, and many of his observations are worthy of wide dissemination, as they are sane and practical. After showing the enormous growth that has been made, and claiming that "show fowls are occasionally imported from Britain, but in the utility field the Americans are considerably in advance of Europe," which is, to say the least, an exaggeration, he says:

Nearly all the States have poultry experiment stations; Agricultural Colleges have regular poultry courses. If the farmer wants information or bumps against something neither he nor his neighbours understand a letter to the State College or to Washington will bring back full information or two or three competent officials to examine the difficulty on the spot. At present, for example, a number of officials in widely different States are making a close study of white diarrhoea, a disease of young incubator chickens, which kills hundreds and thousands, and at one time threatened to put the incubator into a back place as a hatcher.

All this labour and these advantages are bearing fruit. It is quite common to see a regular poultry "plant" on the ordinary farm, with incubators, brooders, laying houses on the most approved principles, and a thousand or two laying hens. Nearly every farmer has an incubator and brooder. But the development of the "poultry farm" is the most interesting part of the business in America. Millions of dollars have been spent in establishing poultry "plants." In one New Jersey town alone it is

calculated that a round million of dollars has been sunk and mostly lost in trying to work what is known as the "intensive" poultry system. Some of these plants had as much as 150,000 dollars sunk in them before they were abandoned. Nothing anywhere approaching this has ever been known in Britain. If a British place sinks 10,000 dollars, or £2,000, in hens, people are astonished at such folly, but £2,000 sterling is moderation itself in the poultry world of America.

This "intensive" system of keeping poultry is nothing more than an attempt to work hens on the factory system. If a hen was a piece of sole leather or a bale of jute the system might work all right, but being a highly organised living creature, strictly governed by natural laws, it does not take kindly to manufacturing principles of the piecework type.

All kinds of people have tried their hand and their own and other people's dollars at this intensive hen-keeping, but retired business men, manufacturers, merchants, and speculators have been the greatest plungers. These men had made fortunes at manufacturing. They reasoned that farmers know nothing about factory organisation and are not trained business men like themselves. Seeing that a hen could be kept for about twopence a week, and would lay four to six eggs a week, which would sell in winter at 1s. 8d. to 2s. a dozen, they argued that an egg factory properly organised and managed on an up-to-date cost system would prove a small or even large gold mine. They never asked the opinion of the most important party in the whole arrangement—the hen. For a year things usually went pretty well—when there was plenty of money. In the second year the hen gave her opinion without being asked. Year three usually saw the "greet-in' meetin'" of the Corporation. In Connecticut two years ago eighteen of these egg and hen factories closed down. And they weren't the £100 or £50 affairs we are accustomed to in Scotland.

Attention is called to the intensive plants, on which are huge aggregations of fowls, in some cases houses holding 2,000 birds in each. Mr. Anderson mentions that

The three great principles of the curtain-front house are:—(1) There must be no draughts; (2) there must be fresh air, light, and sunshine; (3) there must not be damp or wet. The fatal flaw in the system is in attempting to force hens for many eggs, and breed from them also. With this is included an error just as bad, the attempt to breed large numbers of fowls within narrow limits. These two errors have caused the loss of hundreds of thousands of dollars. The only way an intensive plant can hope to succeed is by breeding its stock on unlimited range, and making the iron rule, never to be broken, that no bird heavily fed for laying shall ever be used for breeding.

The writer believes that an intensive plant on the free-range system properly managed could be made to pay in Scotland. The manager would have to be a man of at least five years' experience with this system, a competent poultryman, and a good business man. With 2,000 layers on a plant of this kind, and all food to buy, a really competent and experienced man should be able to make a clear profit of £150 per annum. This does not look very big, but it is a safe estimate, and should keep men with £125 jobs from throwing them up when attacked by the hen fever.

Strange to say, Mr. Anderson does not refer to one of the great dangers of intensive plants—namely, tainted ground.

NOTES FROM ABROAD.

Size of Brooder-Houses.

Mr. R. P. Ellis, Head Centre of the Aurora Farms, writing in the *Reliable Poultry Journal*, discusses the arrangements for brooding and rearing chickens. He condemns, where operations are on a large scale, individual brooders and long-range houses, and suggests the use of 14-foot square buildings divided into six compartments and with a 3-foot passage-way down the centre, as outside large runs can be given, thus obviating the difficulties accruing from small and narrow ground spaces. At first small brooders are used, but as the chickens grow these are removed, and the venue of the birds is never changed. This is a system which deserves attention, and it appears to have been well thought out.

Electric Light and the Egg-Basket.

Not all poultry-keepers have the advantage of electricity laid on, but we cannot tell what the future has in store. We have heard of hatching by electricity, and now an advocate of the same element to stimulate egg-production comes forward. By fitting the electric light in his poultry-houses he was able to feed earlier and later during the winter months, and claims to have greatly increased the yield, evidently persuading the hens that the "time of the singing of birds had come." What the cost was, and the effect upon the birds, is not recorded.

Epsom Salts for Fowls.

Dr. Morse, whose valuable remarks on the "Gospel of Cleanliness" were printed in our January issue (Vol. III., p. 180), recommends in the *Reliable Poultry Journal* the use of Epsom salts for fowls as follows: Once a month from October to March; twice a month from April to September. And whenever any bird appears to be sick a dose of the same chemical should be given to all the flock. He believes that this treatment would go far to increase the power of resistance to disease. It is a cheap remedy.

Laying Competition Uncertainties.

That there is a good deal of luck in laying competitions would appear to be unquestionable. A New Zealand exchange records that one breeder had a pen near the top and another near the bottom in the contest there. Perhaps this adds to the fascination.

Prices in Canada.

Mr. A. G. Gilbert says in the *Canadian Poultry Review* that "the demand for strictly new-laid eggs was never greater than it was during the past winter, and prices were never higher. Another feature of poultry-keeping is the increased summer prices. Education is certainly doing its work." He also says, referring to eggs imported into the Dominion from Russia, "unfortunately we have in our own country all the stale eggs and a great many more than we know what to do with."

European Eggs at the Cape.

The *Cape Argus* says:

The importation of eggs has begun again in real earnest. Included in the "Balmoral's" cargo, shipped at Southampton for Cape Town consignees, were no fewer than 812 cases of this valuable product of the poultry-yard. Large profits are made by various town and country dealers in the handling of such imports, all of which would be at an end were the business of egg production systematically pursued by farmers and householders in this country.

At the same time it must be mentioned that the total imports have greatly declined.

The Everberg Poultry.

The stock of larger races of poultry at Everberg, Belgium, owned by M. Robt. Pauwels, has been sold. This collection won the King's Prize at the recent Brussels Show. We hope M. Pauwels is keeping his wonderful Bantams, of which some account was given in the ILLUSTRATED POULTRY RECORD in May, 1910 (Vol. II., p. 404).

Toe-Nails and Egg Laying.

Chickens with short toe-nails (says Professor James E. Rice, of Cornell) are the best layers. These chickens have short toe-nails from continuous scratching for food, and a chicken that is constantly scratching for food is sure to be industrious. To which we may add that the shortness is the effect, not the cause.

Where the Secret Lies.

Considerable doubt has been thrown upon the ultimate results from what may be termed excessive trap-nesting in development of egg-production. The 200-egg hen as a fixity is by no means yet secured. *Poultry* (American) says that "the weight of evidence seems to point to the fact that the evolution of prolificacy comes about more through the action of the stomach than from the selection of prolific breeding-stock."

New Appointments at Aberdeen.

Miss Ireland, temporary assistant, has been appointed as Poultry Instructress to the Aberdeen College of Agriculture, vice Miss Martin, resigned; Miss Bannatyne has been placed in the assistant's position. Miss Finlayson, another Poultry Instructress, has also resigned, and Miss Cardow elected for the vacancy thus created.

A Powder Explosion and Chickens.

Kenosha, Wis., is going to have a crop of twisted and deformed chickens this year (says the *Poultry Monthly*), and it is said to be due to the recent powder explosion at the mills at Pleasant Prairie. Chickens hatched in the incubators since the explosion are singularly deformed. More than ninety-eight per cent. have twisted legs, broken wings and similar ailments, and while many of them are still living, it is thought that the loss will be unusually large.

Cold Storage Law.

A Bill has been introduced into the American Congress to the effect that eggs and poultry shall not be held in cold storage more than three months. It has not much chance of passing into law, as it would kill the business, which has been none too profitable.

FANCIERS AND FANCY MATTERS.

By WILLIAM W. BROOMHEAD.

A Famous Game Yard—Poultry at the Palace—Are Black Orpingtons Popular?—Chickens of the Year—The Remedy—June Shows.

A FAMOUS GAME YARD.

It is questionable if there exists in this country—nay, in the world—a more complete stud of Old English Game Fowls and Bantams than that which is to be seen at Coombe Abbey, Coventry, and owned by the Countess of Craven. And for show purposes it is certain that no yard has a better reputation, either at home or abroad. It may not be known that in the Old English Game Fancy to-day there are two distinct types of show bird—the one somewhat resembling the Brown Leghorn for quantity of body feathering and profusion of hackles and tail furnishing, and being set on short legs, and the other almost the prototype of the famous old “pit” birds—the stamp used by cock-fighters in days gone by—having hard and short feathering, rather scanty neck hackle, and showing a certain amount of round and muscular thigh, and being altogether more sprightly and “fiery” than the former. It is such as these latter that the Coombe Abbey birds mostly favour, and since they are attended to by one of the best Game fanciers living, and are under the personal supervision of Mr. W. W. Spicer, they are kept, as might be imagined, in perfect condition, a point that weighs well in their favour when they are up for competition in the show-pen. It is some time since I paid a visit to these famous yards, but I hear that the hatching season this year has been a most successful one.

POULTRY AT THE PALACE.

When a fancier writes of poultry at the Palace one generally expects to find reference being made to the excellent winter shows held at the great glass house by the Grand International Poultry Committee. On this occasion, however, I wish to draw attention to an exhibition of another, and for this country quite a unique, kind—namely, the poultry division in connection with the Small Holdings and Country Life Section of the Festival of Empire, which opened last month and will continue throughout the run of the Festival. It is a most happy idea, and one that cannot fail to do a great amount of good to the poultry industry of this country. Some fifty breeding-pens of distinct varieties of fowls—it is somewhat of a disappointment that provision has not been made for waterfowl and turkeys, aye, and for Bantams—are on view, and they represent about thirty different yards, the majority of which, in fact all but one, are those of well-known fanciers. These are early days I may say, and I am assured that the accommodation is in every way suitable, and that the division is particularly well laid out. This is not surprising, however, since the houses are of a new and specially designed kind from the renowned workshops of Mr. Randolph Meech, and the runs are 50ft. by 10ft., and wired in on top.

ARE BLACK ORPINGTONS POPULAR?

During the past season or two it has been very

questionable if the Black Orpington has been as popular as it used to be, both for utility as well as exhibition purposes. And from what I have seen and heard during my visits to different parts of the country I am reluctantly compelled to admit that the variety is indeed losing ground. I cannot help thinking that there has been far too great a craze these past two or three years for massive birds, and to such an extent has this been carried in certain quarters that many of the winning specimens are practically Cochins; in fact, in all but leg feathering they may be said to be very closely allied



A BELGIAN LIGHT BRAHMA.

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to that old breed. There are those who appear to consider that the Orpington should be the elephant of the poultry-yard; but this is not as it should be, since the breed belongs to the medium class and was originated as the utility fowl *par excellence*, a bird of the general purpose kind and good alike for laying and table properties. Few, however, of these massive exhibition specimens are now “worth their salt” when it comes to laying qualities, and not many of them can produce chickens which would be suitable for the spring markets. I was recently discussing the Black with one of the oldest breeders in this country—a fancier who was a member of the first Orpington Club—and he told me that in his opinion the only way

to "stop the rot" is for fanciers who have the good of the variety at heart to give up the Cochin type and breed nearer to the original stamp, a much closer-feathered bird than that which masquerades to-day as the Black Orpington. This is sound advice, and I feel sure that if it is followed it will lead to the revival that is necessary to bring it once more into the front rank.

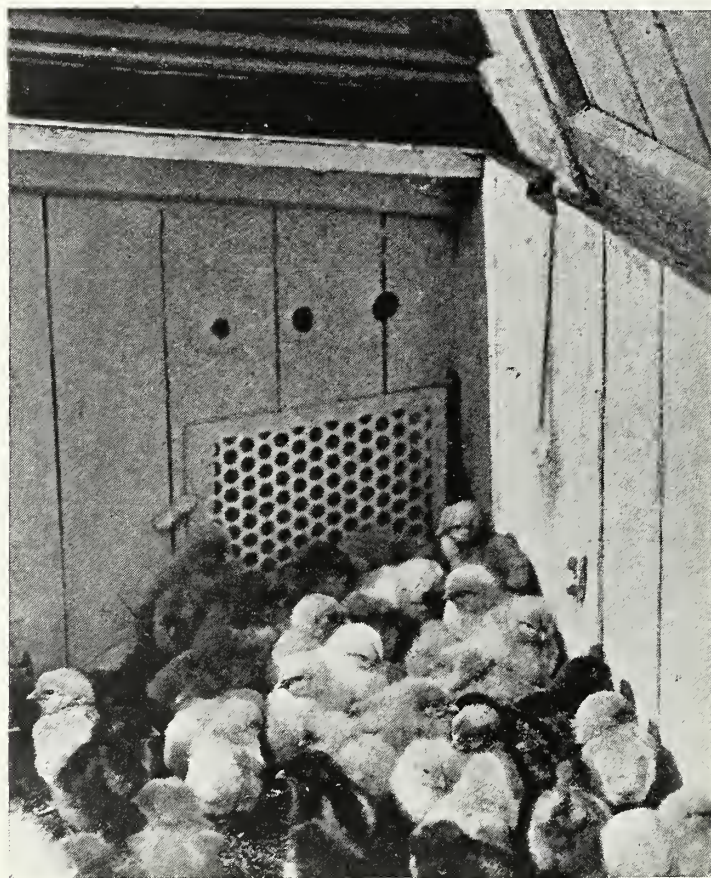
CHICKENS OF THE YEAR.

Ere these notes are published the first shows of the season providing classes for chickens hatched in 1911 will have been held. That it is much too early in the year to cater for chickens for exhibition purposes cannot be gainsaid, since what sort of development can chickens make in four and a half months? At Prescott, on the 18th ult., there was a class for any variety cockerel hatched in 1911, and one for pullets. Referring to a report of that show last year, I see that there were ten entries of cockerels and a dozen of pullets, the winners being White and Black Orpingtons, a Black Wyandotte, and a White Rock, the Black Orpingtons winning three of the six cash prizes. At the Devon County Show at Newton Abbot on the 23rd, 24th, and 25th ult. there were four classes for chickens, two for those of the hard-feathered breeds and two for soft-feathered chickens; while at the Bath and West, which opened at Cardiff yesterday and closes on the 5th inst., the poultry section includes six chicken classes for fancy breeds and nine for table-birds "hatched after December 31, 1910," and which "must not have moulted all the chicken flight feathers of the wing." Candidly I should like to see five-month-old chickens which have moulted all their flight feathers in a natural manner! I can place my hand on some Black Orpingtons and White Wyandottes, hatched in June, 1910, which still retain enough of these flight feathers to enable them to compete, and which, moreover, have all the appearance and handling of youth! In Fancy circles I believe it to be a fact that the breeding season comes to an end by the turn of the first four months of the year; but is it not equally a fact that in many instances that season commences long before January is ushered in? Fanciers have to produce chickens for their own uses, and then supply eggs for setting to those who want prize stock in its cheapest form. When one is anxious to win at the earliest shows one must have early chickens, and it follows that his must be an early season. Fashion changes. At one time the oldest birds, which invariably captured the "plums" in the first few chicken classes of the year, were known as late-hatched birds; such kinds we now allude to as forward chickens. The humbug of it all! No doubt there will be the usual crop of "forwards" at the early shows. Visitors will view them with surprise, and the knowing ones will comment among themselves as to the "nerve" of some of the owners; and there it will end.

THE REMEDY.

Why not make a clean sweep of it all by removing the date for hatching? Then birds can be brought out at all times, and provided they look young they can have a run for their money in classes apart from the old stagers. I do not suggest that there should be classes for birds one year old and under, others for those over a

year and under two, and so on. It would be confusion worse confounded. But a difference could be drawn to distinguish between youth and old age. The production of these forward youngsters is a great tax on the fancier and his man. Has it ever struck the "outsider" in that light? It means that one or other has to be in attendance throughout the long winter nights to see that the January 1 chickens take their meals regularly during the hours when self-respecting chickens will be in the land of nod under their mother's wings. Naturally the appetite during the cold weather is great, and it is just that which enables the man to so feed his chickens that in two winter and two spring months the birds will be bigger than they would be if Nature were allowed to have her own way for six of the best growing months of the year, and man assisted her by feeding his chickens for all they were worth. And what feeding these "forwards" must get! The food must be of a kind that ensures rare growth of bone and body, yet not as forcing as to produce leg weakness and to cause hard bone, otherwise that dread test, "the cartilage test," would assuredly enable the judge to sort out the frauds! Well, well, 'tis said we live in an age of humbug, so small wonder that the Fancy is in the fashion. But we should put our house in order, and the simplest way of doing so is to abolish the so-called chicken classes. Which show committee will begin? I have men-



SOME NEW ARRIVALS.

[Copyright.]

tioned the chicken classes of last month. Those for June will be at Northampton on the 7th and 8th, at Ledbury (the Herefordshire and Worcestershire Agricultural Show) on the 7th, 8th, and 9th, at the Royal Counties at Weymouth

on the 13th, 14th, 15th, and 16th, at the Royal Cornwall at St. Austell on the 14th and 15th, and at the Royal at Norwich on the 26th, 27th, 28th, 29th, and 30th.

JUNE SHOWS.

In addition to the shows mentioned in the preceding paragraphs there will be the Renfrewshire Agricultural at Paisley on the 1st, the Cathcart and Eastwood Farmers' at Langside, Glasgow, on the 3rd, Southport, Stretford, Stanhope, Harpenden, and Blaenau Festiniog, among others, on

Whit Monday; Great Harwood 6th, Stirling 9th, Ossett 10th, Chorley 14th, Thorne 16th, Alloa 17th, Edinburgh 23rd and 24th, Ripon, Loftus, and Dunfermline 24th, finishing up with the "Royal," while in Ireland the events announced up to the time of going to press are Portadown 1st, Dungannon 7th, Strabane 8th, Antrim 9th, Omagh 14th, Newtonards 15th, Ballymena 21st, Clonakilty and Newry 27th, and Mallow 28th. Truly this promises to be a busy month among the shows, to say nothing of the Coronation and other attractions.



MRS. L. C. PRIDEAUX'S CHALLENGE TROPHY.

Model of Yokohama Cock in silver. To be competed for in all Yokohama and Yokohama Bantam Classes throughout the year. To be won by the member of the Club gaining the greatest number of first and second prizes in the season. To be won outright in three years, not necessarily in succession.

EDUCATIONAL AND EXPERIMENTAL WORK.

By WIL BROWN,

Lecturer in Poultry-keeping, West of Scotland Agricultural College, Secretary of Departmental Committee on Poultry Breeding in Scotland (1908-9).

WITHIN recent years important developments have taken place, along educational lines, in connection with the industry of poultry husbandry. It must be admitted, however, in view of the need for future advancement, that the sum total amounts to very little. I submit that the time has now arrived when the entire question of education and experimental work in poultry-keeping should be reviewed, in order that it may be placed upon a sound and permanent basis, if the industry is to receive full benefit as a result of such work in the future. As Sir Robert Morant remarks in his recently published "Memorandum on the Principles and Methods of Rural Education" (Board of Education, 1911):

It is beyond doubt that the much-needed revivifying of agriculture and other rural industries in this country must be brought about by a natural and not by an artificial stimulus. And the experience of urban industries during recent years has abundantly shown that the most effective stimulus of all—because it is the only one which goes to the root of the matter—is the constant application of expert knowledge, after investigation on ever fresh lines of experiment and observation, to the solution one by one of each of the many and diverse problems which beset the daily operations of industrial practice. Agriculture has at least as much to gain from the expert as shipbuilding, or dyeing, or weaving.

Until recently, and still to some extent, poultry-keeping was looked upon as a side issue, something for the women to handle, or for those who had failed in health, were thriftless or indolent, or unsuccessful in other pursuits. To-day the industry has emerged from its infantile stage. It is a business of stability. While we must never forget the needs of smaller producers, it is necessary in future to regard the question on broader lines than hitherto and extend the scope of the industry, so that we may keep pace with the growing requirements of those who conduct their operations on an ever-increasing scale. Where ten hens were kept formerly at present hundreds may be found. That which was the despised by-product of former years is the growing industry of the present day, and will be the national asset of the years to come. The advancement or development of a business or industry does not benefit only those who are directly concerned in the practice; it adds to the wealth of the whole community. For example, if we state that there are 30,000,000 laying hens in the United Kingdom, an estimate that is certainly below the true total, and we can increase the average output from each bird by five eggs per annum, which eggs are sold at one penny each, it would mean £625,000 increase in the value of the egg product of the kingdom every year, which additional money would be circulated to the distinct advantage of the community as a whole.

The real substantial justification for public educational and experimental work is that it is vastly easier and cheaper for all the people to delegate

to public authorities—whether these be national or local authorities or agricultural colleges—that is, employ a few people to make the mistakes incidental to investigation work, and assess the cost upon the entire population, than for thousands to try experiments for themselves, without system, guidance, or avoidance of mere repetition, each having to pay the bill. For experimental work imagination is required, and is, therefore, speculative to some extent. The actual producers can seldom afford to speculate, nor have they the time or ability to conduct investigations. Moreover, one experiment and its results made public may help thousands in their daily work. An illustration of this is afforded by the result of one experiment with which I was associated at the College Poultry Farm, Theale. The dry feed system for chickens was carefully tested over three successive rearing seasons and the report published. Since the introduction generally of this method of feeding it is estimated that it has added to the returns of poultry-keepers of the United Kingdom at least £100,000 per annum.

We must realise that the whole problem is based on the principle that a man is the unit of a family, a family the unit of a community, a community the unit of a county, and a county the unit of a country. Whatever tends to make a man more prosperous, that enables him to live better, to have the things that make for happiness, and to educate him in good citizenship, is the fundamental principle of prosperity. Education underlies success and prosperity.

It has been stated that the best kind of instruction is that which "teaches people in terms of their daily lives"—that is, by means of the things from which their livelihood is obtained. If we had realised the truth of this statement in the past, and its bearing on agricultural teaching, I think there would be fewer alterations to make in our present methods. This point, however, will be discussed more fully when I deal with college teaching.

In making suggestions for the improvement of instruction it is necessary to regard the subject in various ways, since different classes of the community have to be reached, and it is impossible, therefore, to lay down hard-and-fast rules that will apply in all instances. I think the subject can best be divided into the following:

1.—RURAL ELEMENTARY SCHOOLS.

In the "Memorandum" already referred to, I find it stated that "it is by small beginnings from within that most of the really successful rural schools have grown into making full use of the great wealth of material which country life affords for good teaching." I do not intend to suggest that such should be compulsory, but in those cases where the teacher is interested in poultry he should be encouraged to include this subject in any scheme of nature study. The importance and practice of the industry can be brought to the notice of the children in the arithmetic class by example; in the wood-working class by the making of small appli-

ances, which, by giving the pupils a share in the ordinary operations, they may be enabled to put into practice in after-school life. They would also have the opportunity of learning something as to breeds and varieties in relation to local conditions, and be taught to recognise the more common diseases and how to treat them. Such a system would not only help the children in later life, but they in their turn would educate their parents by telling them that which they were learning.

2.—COUNTY SCHEMES (INCLUSIVE OF LECTURES, PRACTICAL INSTRUCTION, AND DEMONSTRATION CENTRES).

No county can be said to have a fully-developed scheme of education suited to meet the needs of agricultural districts in all its grades, though a few counties have made considerable progress as regards one or more particular grades. This is true of poultry teaching. Not only are we handicapped in that the subject has not yet been systematised or classified, but at the same time the needs of the rural population have been insufficiently considered in this direction.

Teaching must not only be provided for those who go to agricultural institutions, as the majority of people cannot and never will be able to do that, but education can and must be taken to the people, if it is to influence those whose requirements are greatest.

We find that twenty-six out of the sixty counties in England and Wales did not provide any local teaching in poultry-keeping during 1908-9, though the opportunity is vast and the need imperative. These counties embrace 10,027,768 acres of cultivated land, or nearly 37 per cent. of England and Wales, and no local instruction was placed within the reach of the entire population within the administrative areas—that is, omitting the urban districts—which is upwards of 7,000,000, who have thus been deprived of a legitimate share in this form of education.

The remaining counties, although they give certain facilities, have nothing on which they can congratulate themselves, since many of them appear to do as little as possible in this direction. In relation to the annual expenditure on eggs and poultry, amounting to upwards of £21,000,000 in Great Britain, no county has as yet dealt adequately with this subject, and the greater number are very far in the rear.

The Scottish counties are divided between the West of Scotland Agricultural College, the North of Scotland Agricultural College, and the East of Scotland Agricultural College, these bodies sending out lecturers as occasion demands, but although a little has been attempted in the past, we may take it that the work in Scotland is just being organised.

Public lectures in rural districts serve one very good purpose—namely, they awaken interest in the subject; but from my own experience, extending over a period of eleven years, I have come to the conclusion that the value of such lectures is not always so great as is generally believed where this represents all the instruction given. If a lecturer is to get into closer touch with, and gain the confidence of, those who are concerned in the work, he must depend more upon personal intercourse than on a public recital of a number of theories and ideas.

There is a widespread feeling among the farming community that college or county lecturers are theorists and not practical men. Unless we can prove this belief to be erroneous it will be difficult to bring about any development. Judging by the past, perhaps farmers have not been so far wrong as might have been supposed, since the supply of qualified lecturers was very limited, and in many instances totally unsuitable teachers were perforce appointed, who were sent to teach that which they knew only superficially to men who speedily discovered their deficiencies and whose prejudices were thereby confirmed. One of the essentials is that teachers should be experts in their subject, having a wide knowledge of both theory and practice, for otherwise they will have but little influence on their hearers. It is here where a great change is required in advanced teaching on poultry-keeping at colleges, in order that lecturers and instructors may be more highly trained than has been possible in the past.

For the purpose of practical instruction the lecturer might be provided with a van, equipped with models and poultry appliances of a suitable nature, or, following on the successful efforts of the Egg Train in South Wales last year, specially-fitted railway vans might be employed. In the purely rural districts this is a most valuable method. It strikes the imagination as well as provides instruction.

The country lecturers or instructors should also be available for speaking at meetings of farmers' associations, when discussions should follow, and also for lecturing and demonstrating at agricultural shows. By these means a number of people would be reached who would otherwise probably be out of the scope of their ordinary work.

When the advancement made in this direction was sufficient to warrant it, a further development should be in the provision of more advanced teaching at Farm Schools or on selected farms in the district.

The aim of such Farm Schools would be to supply instruction on a lower plane than that of an agricultural college, for young people in the various subjects of rural economy, amongst which poultry-keeping should occupy a most important and leading place. In addition to the regular teaching included in the curriculum of such Farm Schools, these centres should be used for demonstration purposes by the lecturers and practical instructors. One day a month might be set apart for such work, when a few short addresses might be delivered and one or two practical demonstrations given, together with a tour of inspection of the plant, when visitors should have the use and advantages of the special appliances explained to them.

Perhaps I may be permitted to refer to the Poultry Institute Day we held at Holmes Farm, Kilmarnock (the farm of the West of Scotland Agricultural College), in August, 1910. At this meeting addresses were delivered on Production, the Requirements of the Market and Organisation in Marketing, and in addition demonstrations were given in trussing, boning, caponing, and egg-testing and grading. In the forenoon over seventy visitors were present, which number was increased to upwards of a hundred for the afternoon session. Many of the visitors came from the further confines of

the south-western area of Scotland. Since the meeting was so warmly supported and so much interest manifested we are arranging for similar Institute Days during the coming summer. As one result over thirty letters were received afterwards asking for further advice.

III.—COLLEGE TEACHING & EXPERIMENTAL WORK.

It is necessary for the proper treatment of this aspect of the question to extend the scope of the subject, and to refer briefly to general agricultural education, as well as special poultry teaching—the reason being that a Department of Poultry Husbandry at a college is only one of the many branches followed, and, therefore, it is affected by the same influences.

There is no doubt that Canada and America are in advance of the United Kingdom in educational work connected with the industry of Poultry Husbandry, and I think we can learn something from those countries.

I have had the opportunity of visiting the majority of the great Canadian and American Agricultural Colleges and Experiment Stations, and have found that they differ considerably from those in this country. In the first place, the majority of such institutions are Experimental Stations first and Agricultural Colleges second, and were established as the former and have evolved into the latter after a lapse of time. With a few this state has not even yet been reached.

It is the work of a college to attempt the elimination of false teaching, to weed out unprofitable practices, and to make experiments as to practical methods for application to farm conditions. I maintain that we have so far failed in our duty to the people, in that so little care and attention have been given to the experimental side of the question. In addition to this they should serve for the training of teachers and advanced students.

I would suggest, in the second place, that a great difference between Canadian and American colleges and our own lies in the conditions. The college should be surrounded by its farm, on which the students find regular work, and where they are living in an agricultural atmosphere, and not one that is academic and literary. Seven English and Welsh colleges have special grants for farms, but at all of these, save one, students either live in lodgings or hostels in the town, and therefore see little of rural farm life. The one agricultural college in Scotland possessing a farm is now in a similar position, but this is to be changed in the near future, since the two are to be brought together on a new site.

The conducting of poultry experiments offers practically a virgin field in the United Kingdom, since very little has been attempted in the past. There are sufficient problems awaiting solution to keep a staff busy for many years, and every day new questions arise that require to be answered. This is not the time or place to give full particulars, but I may mention a few points that wait the coming of fully qualified investigators:

Incubation—Best conditions.

Breeding Experiments—Inheritance; age of stock birds.

Feeding—Influence on sex; to show cost; natural foods.

Housing experiments. Manurial tests.

Preservation and treatment of eggs.

Eggs—Weight and quality from various breeds.

Fattening tests.

It is impossible to over-estimate the value of experimental work, and, figuratively speaking, the cost should not be great. To give but one illustration: If, at the expense of, say, £1,000 some new method of feeding poultry were discovered whereby a reduction in cost of 3d. a year were effected, this would mean a saving of £375,000 to poultry-keepers every year. A pound saved at the expense of 16-25d. of public money. Profit can be realised by cheapened production as well as by increased production.

It is a regrettable fact that only five out of the seventeen agricultural colleges in England and Wales make any serious attempt to give instruction in poultry-keeping.

In connection with our agricultural colleges we also require:

1. That every advanced student in Poultry should be required to have done at least a year's practical work to qualify for entrance, and that before a teaching certificate was granted each student should have studied general agriculture for twelve months.
2. Longer and more complete courses with half or two-thirds of the time spent in practical work.
3. (a) That scholarships be awarded to the best students at Farm School Courses, tenable at a college; and (b) that travelling scholarships be granted to selected students at colleges.

It is true that in Canada and America money has been abundantly provided for agricultural and poultry work, and that here we have been starved by central and local authorities. Money, however, is not everything. It must be rightly applied.

To give two illustrations. The Department of Poultry Husbandry at Cornell University has recently been granted 90,000 dollars (£18,750) and the Michigan State College 12,000 dollars (£2,500) for further developments. At Cornell there is a permanent staff of twelve men and women engaged in poultry work, the greater part of their time being devoted to experimental work.

IV.—RESEARCH AND INVESTIGATION OF DISEASE.

For all advancement in knowledge I believe we must rely on the experimentalist at the outset, but there comes a time when the conduct of an experiment is checked owing to lack of special scientific knowledge on the part of the worker. Advice must be sought from, and help given by, the scientist for the proper elucidation of these problems. One is of no use without the other, and therefore the work of the practical man must be supplemented and completed by those who have higher scientific training. It should be the work of the chemist, the bacteriologist and the biologist at the college to give every assistance they can to those who are conducting the experiments. As an indication of the work to be performed by experimenters and scientists together, I would mention such problems as those connected with breeding, feeding, and incubation.

With all intensification of method there is a greater risk of disease, and this has been fully demonstrated in poultry-keeping. Very little is known about poultry diseases, and there is here a large field for research work.

[Extracts from a paper read at the Conference on the Poultry Industry, held at Dublin, on May 4 and 5.]

THE POULTRY-YARD IN SUMMER.

By FRED. W. PARTON.

THE care of chickens during the very early stages in their growth, their general management in the spring of the year, and the methods of treatment of the stock birds during the time of breeding are subjects upon which much valuable information from time to time is given. There is, of course, no doubt that these are of vital importance, and their neglect may ruin, or at least minimise, success. With the approach of summer it is very often thought that the time has passed when special attention is necessary. This is, however, a mistake, for vigilance should not be relaxed with the coming of warmer weather; as a matter of fact, it is a very critical period in a chicken's life, and special treatment is required. Up to this time they have been growing apace, and their general appearance would suggest that all cause for anxiety is past. But there comes a time when they appear to be absolutely standing still, and much of their activity has departed. The reason for this is that they are growing their adult plumage, and a special course of feeding is necessary for the formation of feather. Another factor to be considered is that the land has lost much of its freshness, and they are fagging with fatigue from the hot weather. Any one of these adversities is sufficient to account for their lassitude, so that it can be readily imagined that the combination has a drastic effect. Each factor here mentioned can, however, be easily combated by a little knowledge of what is required, and judicious management in applying it. Food that has fulfilled all the necessary functions up to the present time should now be of a different nature. While for the growth of the body from early chickenhood the food should be nitrogenous, since this is the chief element needed for their growth, now that their mature plumage is forming it should be excessively high in albuminoid value, as the food has not only to maintain the chickens' growth, but must also give nutriment for the formation of new feathers. The functions the food has to perform are to encourage and maintain growth of body, assist in feather formation, and to repair the waste of tissue in the chicken's body which is constant in chick and adult alike. For the completion of this work, of all other elements nitrogen is by far the most important.

Oats, as a well-balanced food—that is, balanced in the chief constituents—is doubtless one of the best, since it contains what is mostly required for chickens, and if oats be fed to them from as early an age as they can partake of this grain, they will grow a larger frame than will be produced with any other food. A good plump, short sample

should, however, be used, otherwise it is far from an economical food, since the husk is so plentiful that after the birds are satisfied apparently, as much food remains as before the birds started feeding. Wheat, buckwheat, and a certain proportion of animal matter should comprise their staple diet. With regard to the latter, circumstances must govern this matter, and each individual poultry-keeper must judge for himself, after regard being had to existing conditions, what quantity to use. In the early summer, fowls that are so fortunately placed that they have a farm over which to wander will obtain all the animal food that they require from the land, whereas those birds that are kept in confinement are deprived of this most valuable addition to their dietary. A substitute must be found. Table-scrap, or any form of meat, if properly cooked and given in small quantities, will be of the utmost value. This, together with an ample supply of vegetables, either raw or cooked, and mixed in their soft food of barley meal and middlings, will be found to considerably expedite feathering without neglecting the other functions for which the food is responsible.

In speaking about the importance of judiciously feeding animal food to fowls in summer, it must be made clear that this only applies to the growing birds. The adult fowls, now that their services are not required for breeding, should not be supplied with this form of food. It is extremely valuable for them when their eggs are required for incubation, as it assists fertility; but from, say, April, up to the time of moulting, it is quite unnecessary; in fact, it is injurious, being of too



A WELL-SHADED SPOT FOR GROWING STOCK. [Copyright.]

stimulating a nature, except when feeding is for some specific purpose.

A very important item in the management of the poultry-yard in summer is that the chickens shall have as much change of land as the conditions will allow; great benefit will accrue from so doing. It will act as an invigorating tonic

and prevent that fagging which is so common among chickens, especially where large numbers are reared.

Chickens must not be cramped as to sleeping accommodation, or, however favourable may be the land over which they run during the daytime, it will be neutralised by breathing impure air at night. The danger of overcrowding may be very largely obviated by early separation of the sexes, and this should not be a difficult matter at the present time, since, even with Langshans and similar breeds, the difference between cockerels and pullets can readily be distinguished. Each of the sexes should be located at sufficiently distant parts of the farm to prevent their mixing. This, together with the exclusion of the wasters from the flock—culling should be rigidly and systematically carried out—will go far to provide the necessary space, which is such an important factor in allowing freedom and liberty of action, and for the full exercise of the natural faculties so essential in the young of all animals.

The importance of shade during summer must not be overlooked, the lack of which will cause a large amount of trouble. Where trees or bushes or any sort of permanent shelter is available, the chickens are not slow to take advantage of it. Where, however, this does not form a part of their rearing ground, by a little dexterous management shelter may easily be improvised—canvas, straw-plaited into hurdles, an upturned crate covered with sacking; in fact, there is no limit to what may be employed for the purpose.

The breeding-pens should be broken up immediately all the eggs have been secured that were intended for hatching. The removal of the males will be a relief to the hens, whose condition, after a heavy season's laying, is somewhat run down. He will also benefit by the separation, and when he is intended to be used again next year for the breeding-pen his vigour will be much greater for the enforced rest. A separate place need not necessarily be provided for the cocks on their removal from the breeding-pens, and if an old male bird be put with each batch of young cockerels they will usually, after the first few days, agree quite well together; they are thus readily disposed of. On the general run of farms it is as well to keep one breeding-pen intact, so that when hens come on broody in the warm weather fertile eggs may be had for them. The chickens so hatched will be useless, so far as laying this winter is concerned; but if of any other than the non-sitting breeds they will render a great service on the table late in the autumn and during the winter. Speaking generally, it will be a very much more economical plan than allowing the hens to remain broody without utilising the period to better advantage than attempting to break them off. This latter may be accomplished, but frequently it is only temporary, and they again soon show the desire to sit. In addition to this, the rest from laying obtained by the hen when sitting on the eggs and when brooding the chickens is of considerable assistance in securing a supply of eggs about the time when they are becoming scarce. It is a well-known fact that hens cannot be always laying, and when their "time off" can be profitably employed it is advisable to take advantage of it.

THE MODERN CRAZE FOR SIZE.

MR. GEO. A. PALMER'S REPLY

To the interesting correspondence which has been appearing in the I. P. R. during the last few months. It will be remembered that Mr. Palmer started the correspondence with his valuable article in the March issue.

THE discussion initiated by my article on the modern craze for size seems to have spent itself, and it is noteworthy that the fanciers are for the most part on one side and the utility men on the other. It is curious that utility men usually take the modest attitude of only claiming that for which they have especially bred—viz., egg-production. The fancier, not content with having what no one disputes—the fancy points for which he has made every effort—also claims that his birds are equal as layers to the utility strains. This is nonsense. Any scientific breeder can get the one particular point he aims at. For the fancier to claim that his birds, which, having been bred for size and show points, often from the worst laying hens in the yard, are equal to those strains which have not only been selected for years, but recruited from the best laying birds obtainable in all the four corners of the earth, is assumption bordering upon arrogance. All the men who have especially studied egg-production are in agreement with me on the question of size. But I have further facts to offer—not mere assertion, but incontrovertible proof. The laying competitions of the Utility Poultry Club have always taught much about breeds as well as strains to those who looked below the surface. The entrance and departure weight was taken of all the birds in the Southern Competition. Entrance weights:

Leading 4 Black Leghorns, total 11lb. 10oz.
 Last 4 Black Leghorns, total 17lb. 14oz.
 Leading 4 Buff Orpingtons, total 18lb. 4oz.
 Last 4 Buff Orpingtons, total 18lb. 4oz.
 Leading 4 White Wyandottes, total 16lb. 2oz.
 Last 4 White Wyandottes, total 23lb. 1oz.
 Leading 4 Buff Rocks, total 17lb. 4oz.
 Last 4 Buff Rocks, total 17lb. 8oz.
 Leading 4 Rhode Island Reds, total 18lb. 10oz.
 Last 4 Rhode Island Reds, total 19lb. 6oz.
 Leading 4 White Leghorns, total 11lb. 6oz.
 Last 4 White Leghorns, total 14lb. 14oz.
 Leading 4 White Orpingtons, total 19lb. 3oz.
 Last 4 White Orpingtons, total 22lb.

Now let us see something of the outgoing weights after four months of the same diet:

The leading 4 Black Leghorns, each 3lb. 8oz.
 The last 4 Black Leghorns, each 5lb. 13oz.
 The highest 16 Buff Orpingtons, each 5lb. 11oz.
 The second 16 Buff Orpingtons, each 6lb.
 The third 16 Buff Orpingtons, each 6lb. 7oz.
 The last 8 Buff Orpingtons, each 8lb.
 The highest 36 White Wyandottes, average 5lb. 6oz.
 The second 36 White Wyandottes, average 5lb. 7oz.
 The third 36 White Wyandottes, average 5lb. 5oz.
 The fourth 36 White Wyandottes, average 5lb. 11oz.
 The last 4 White Wyandottes, average 6lb. 12oz.
 The leading 8 Buff Rocks, average 6lb. 1oz.
 The second 8 Buff Rocks, average 6lb. 11oz.
 The third 8 Buff Rocks, average 6lb. 13½oz.
 The leading 8 Rhode Island Reds, average 5lb. 8oz.
 The last 4 Rhode Island Reds, average 5lb. 14oz.

The leading 8 White Leghorns, average 3lb. 14oz.
 The second 8 White Leghorns, average 4lb. 12oz.
 The third 8 White Leghorns, average 3lb. 15oz.
 The last 4 White Leghorns, average 6lb. 3oz.
 The first 8 White Orpingtons, average 6lb.
 The second 8 White Orpingtons, average 7lb. 2½oz.
 The first 4 Speckled Sussex, average 6lb.
 The second 4 Speckled Sussex, average 5lb. 13oz.

Comment is almost needless. These figures can be verified by anyone who likes to get the report of the competition from the secretary of the Utility Poultry Club.

In almost every case the laying was in inverse proportion to the weight.

As old Chaucer used to be so fond of saying: "There is no more to say." With all the farm stock that I have handled, the large specimens eat more than the small. I do not mean that it is so in every individual case, but it is so on the average. If the 8lb. hen eats no more than the 4lb., she would still be the wrong bird to keep on account of the paucity of her eggs, but when we consider that she takes half as much food again we can easily see how losses are made in poultry-yards. It is not the quantity of food eaten, but the quantity digested and assimilated that marks the bird or animal of robust constitution. The digestive organs of all live-stock weaken with age. Every observant farmer would tell us that an old cow eats more than a heifer to produce the same quantity of milk of equal richness. As a matter of fact, it is usually increased quantity of inferior quality. Then we see why it does not pay to keep the average hen to a great age, although one of exceptional constitution may be worth it, not only for her productiveness, but for reproducing her kind, with probably the same good qualities.

I could give instances from plant life showing that the same law rules there—all large apples, pears, mangolds, swedes being of inferior quality to the smaller ones. As Burns said: "Ask why God made the gem so small and why so huge the granite. Because He meant mankind should set the higher value on it"—which is very indifferent poetry, but contains a truth.

At the Dublin Poultry Conference in May the subjects of eggs and marketing were fully considered. One of the most surprising things there, was the unanimity with which the large wholesale egg dealers condemned the extremely large eggs. They laughed at the Danes sending eggs classed to 20lb. the 120. This is making a fetish of grading.

It does the trade harm and makes people, who know no better, dissatisfied with the moderate-sized eggs such as can be produced by the ton, and which it pays to produce.

Merchant after merchant made the same statement: "What we want are 15lb. and 16lb. eggs, no larger." That is, 2oz. to 2 1-8oz.

My 2 1-5oz. average would come to seventeens, which is more than the traders, who have made a life study of the business, require.

There will always be differences of opinion, especially where there are differences of interest; but I think enough evidence has been brought forward to cause the purely utility poultry-keepers, who look to this paper for guidance, to eschew the extremely large hen and to be satisfied with eggs of the size which the largest dealers say are what they want.

POULTRY-KEEPING IN ISLAY.

CONSIDERABLE interest is being taken in the Island of Islay at the present time, since two large estates—those of Kildalton and Oa—comprising upwards of 54,000 acres, are in the market. Islay is the most westerly, as well as the largest, island of the Southern Hebrides, being twenty-five miles long by twenty miles wide.

The history of Islay is very interesting, and the ecclesiastical remains date back into the dim past. The island was pillaged and burned many times by the Norse between 870 and 1263. It was afterwards surrendered to Hakon IV. of Norway, and later restored to Alexander III., and until the seventeenth century it was held by the Lords of Islay, the Lord of the Isles, Earls of Ross, and the House of Islay and Kintyre. From 1614 until 1847 it was in the hands of the Campbells of Cawdor and the Campbells of Shawfield. The modern development of the island was commenced in 1760 by the Campbells of Shawfield.

The present-day agricultural story is practically the same as that of any other part of the Highlands—namely, that, whether for good or ill, the crofting community is decreasing rapidly, and the farming land is now worked by a comparatively small number of farmers. There are glens, which only a few years ago gave a livelihood to scores of crofters, that to-day are farmed by one man alone. One of the most heart-rending stories possible to tell is that connected with the depopulation of the crofting areas of the Highlands; the tale of struggle against adverse circumstances is woeful in the extreme.

The poultry-keepers of Islay are handicapped very considerably, in that they are so far distant from their markets, hence special branches of the industry must be developed if the industry is to prosper. One branch that is being advocated at the present time is the production of capons for the mainland markets. Surplus cockerels in the spring, if they can be sold, only realise about 8d. to 1s. each, and at this price they are unprofitable. The idea is to caponise the males of the heavier breeds and to allow them to run on the waste ground during the summer and autumn, and later fatten them for the Christmas market. It is believed that this one branch would make a great difference annually in the value of the poultry products from the island. It is hoped that, as a commencement, about 500 birds will be operated on this spring, and it is expected that good prices and profits will be obtained.

If landowners are sympathetic towards an extension of this industry, it is a great factor, and it bids fair for the success of the industry in Islay that the three principal owners are all eager to help as much as possible. Mr. P. J. Mackie, the White Horse Whisky magnate, is one of these, and his endeavour is always to assist those who live upon his land.

"Green Islay, the Queen of the Hebrides," is not only a Mecca for the antiquarian, the geologist, and the sportsman, but also for those who have to make a livelihood from off the soil.

Big Figures.

It is estimated that the poultry and eggs produced in the United States last year were valued at \$720,000,000 (£145,000,000).

SOME NOTES ON FEEDING.

THERE can be no doubt that feeding poultry is an art, and one to which everyone who keeps fowls may profitably devote himself. It is not so much the material that matters, but how it is given and in what quantity, and it is an unfortunate fact that a great many people fail to realise the importance of the matter, and regard a hen as a mere machine, apparently supposing that the more food they cram into her the more eggs she will lay. The amateur's fowls are kept in such a way that they are more likely to suffer from the effect of careless feeding than those which enjoy a free range upon a farm. The latter get plenty of natural exercise, so that if they happen to be fed a little too generously it amounts to nothing worse than a mere waste of food. But with the amateur's fowls, kept, as a rule, in close confinement, there is a far more serious effect, for a hen that is fed too generously has no incentive to work by scratching for something more. If she can satisfy her appetite by eating what is thrown down to her or placed in a trough, she will have nothing more to do during the remainder of the day but to stand idle, and that inevitably leads to internal fattening, which is the cause of many laying failures. Even the most active hen may give way to idleness if fed in such a manner as to discourage exercise, and it is only necessary to examine a very fat hen after death to realise how the heavy coatings of fat interfere with the activity of the productive organs. This also generally leads to liver complaint, and when one's fowls get to that stage the cheapest plan is to wring their necks and write off the loss as a bad debt that can never be recovered. But what puzzles the beginner is how to feed without making mistakes. It is impossible to adopt hard-and-fast rules to govern quantities, since some birds require more than others, and various conditions have to be taken into consideration, so that the matter must be left entirely to the judgment of the poultry-keeper. We have all at various times experienced the difficulty of gauging the correct amount of food to give our fowls in order to produce the best results, and it is only by carefully watching the effect of what we give that we can form an opinion as to what suits them best.

FEEDING IN CONFINED RUNS.

Some little time ago a poultry-keeper appealed to us for advice about the feeding of his fowls. He gave his birds three meals a day, finding that, although they were always ready for the next meal, it was impossible to get them to take scratching exercise in the intervals. The reason was obvious. The first meal consisted of household scraps, fed in a pan; the second of greenstuff, with more scraps, fed in the same way; and the third of hard corn thrown down among the litter. The fowls had a generous meal each time, and they could afford to wait comfortably until the next, especially as there was nothing whatever to encourage them to scratch, for, after all, there must be some strong incentive to induce birds to take exercise of this kind. We advised this person in the first place to give considerably less at each feed: to give four meals instead of three; and, finally, to throw down a little hard corn after the soft stuff to encourage scratching.

The principle of giving four meals, or even more, in the day may not appeal to those amateurs who can only attend to their fowls in the morning and evening, but it possesses so many advantages that we recommend its adoption by all who keep laying hens in small runs entirely for egg-production and are prepared to take reasonable care in feeding. If the latter proviso were not observed the four meals a day would be more disastrous than ever, for the principle consists of giving four (or more) small meals per diem instead of two or three larger ones, and the reason is that, although the birds may not actually get any more food in the day, they have more encouragement to take exercise. For instance, supposing we feed our fowls twice a day. We throw down some corn at each meal, which will keep the hens scratching for an hour or two, or so long as there is anything to be found. Then they will stop, and, with the exception, perhaps, of an occasional desultory scratch to see if anything remains, the rest of the day will be passed in comparative idleness, which means that the birds become chilled in winter and become fat and inactive at all times. Then let us try the plan of feeding four times a day, and note the difference. We give proportionately less, of course, at each meal, but provide something for the birds to scratch for, the effect of which lasts very nearly until the next meal comes round, when they will again be set scratching, and the net result is that the fowls have four or five hours' more exercise during the day, and little, if any, more food. To carry out this principle it is necessary to combine soft food and hard corn, which is, perhaps, the best plan in other respects for fowls kept in confinement. The soft food is stimulating, and if little is given at first a few grains of hard corn may be thrown down among the litter to complete the meal and to provide an incentive for scratching exercise.

HOUSEHOLD SCRAPS.

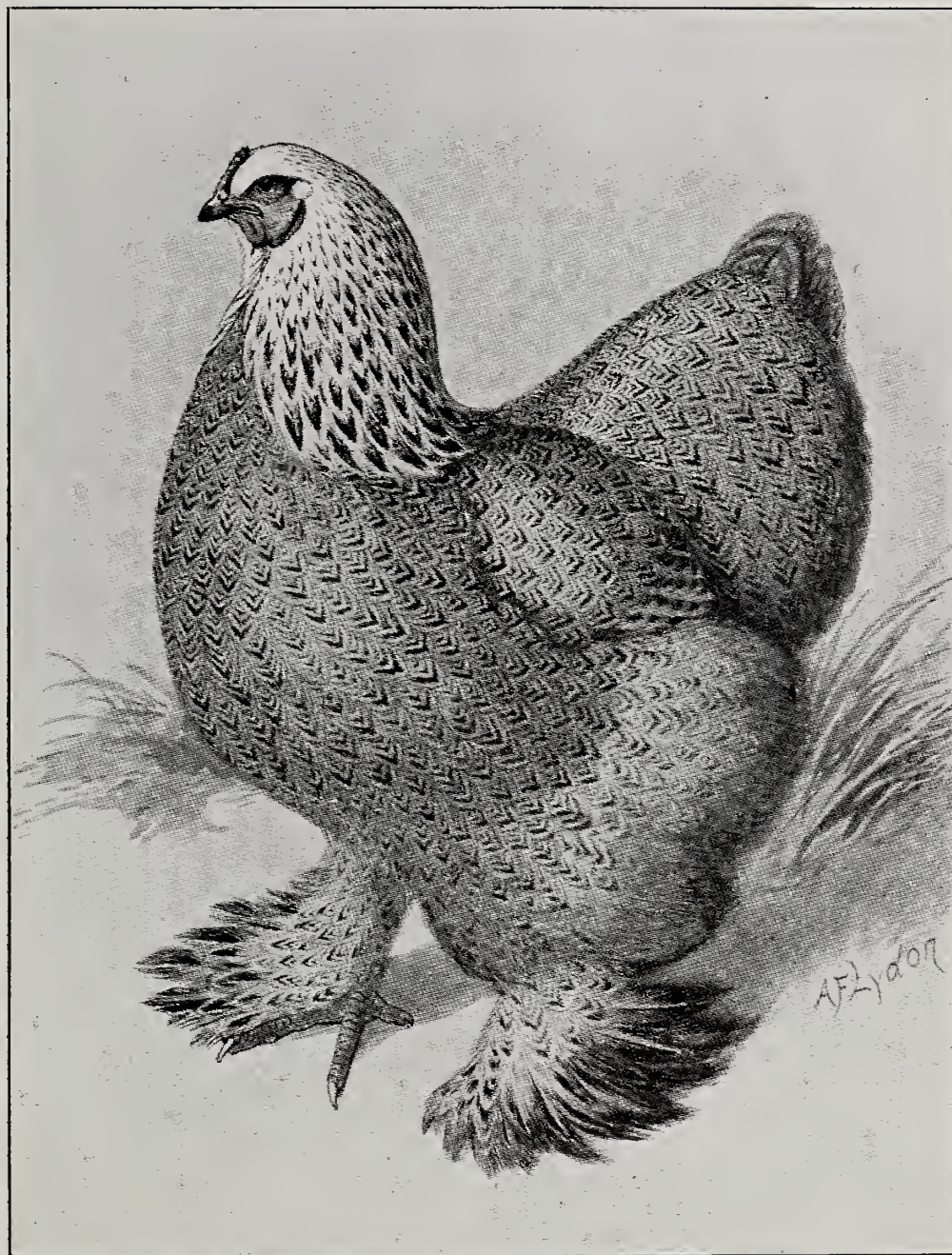
Small poultry-keepers have been advised that by utilising household scraps they can keep their fowls in productiveness at a very small cost. This is very true, provided the scraps are given in a proper manner, but it does not mean that birds should be kept upon this kind of food alone. The scraps are stimulating besides being economical, but they give the best result when used to help out corn and other purchased foods. The most suitable scraps to give to poultry are waste pieces of bread, cooked potatoes and other vegetables, pastry, cakes, &c. Scraps of meat should be put on one side to be given separately, and potato parings and other uncooked roots should be boiled if they are to be used. The best plan is to keep a stock-pot in which to keep all scraps that come from the house, and if hot water is poured over them in the evening and they are allowed to soak all night the liquid may be strained off in the morning and the mass mixed with sharps or barley-meal into a fairly dry, crumbly consistency. This may be given, as we have already said, for the beginning of the meals, and if there is sufficient a little may be given for each feed during the day, provided the birds have plenty of hard corn as well. Scraps of meat should be cut up into small pieces and given separately, whilst bones with a little meat upon them may be put into the run for the birds

to peck at. Fresh green food must also be given separately, as the cooked vegetables are not sufficient, and for winter use, when greenstuff is scarce, there is no better substitute than swede turnips, which should be split in two and hung up within reach of the birds, as they would soon be covered up and fouled if thrown upon the floor of a scratching-shed.

SOFT FOODS.

It naturally follows that those who keep a larger

meal and cooked cereal food, any of which, if scalded and mixed with barley-meal or sharps, makes an excellent feed by itself or together with household scraps. Pea-meal is also useful for mixing with wet food, and is better for laying hens than Sussex ground oats, though the latter is undoubtedly the best ground food for rearing young stock and for feeding table-birds. Barley-meal or other meals by themselves are not so serviceable as when used in conjunction with some scalded cooked food, as we have described.



MR. NORRIS-ELYE'S DARK BRAHMA PULLET.

Mr. Norris-Elye writes:—"The dark Brahma pullet illustrated above is my Palace Cup pullet of 1891, a bird which I have always considered one of the finest pullets I ever saw. As an instance of the way in which that strain bred, I may say that the 4th, 5th, and very highly commended pullets in the same class were all bred by the same sire, whose pedigree as a pullet-breeder ran back for many years in my own yard."

[By Courtesy of "Feathered World."]

number of fowls find their household scraps do not go so far, so that the cost of feeding per head is higher. In such cases it will be necessary to give soft food in another form. There are many excellent specialities on the market, such as biscuit-

HARD CORN.

In selecting hard corn we must be guided by the conditions under which the fowls are kept, the season of the year, and the price, for at the time of writing the value of foodstuffs stands at such a

high figure that the most useful cereal of all—wheat—is too expensive for the ordinary poultry-keeper. A good sample of wheat costs about 6s. a bushel, and at that price even its valuable qualities do not entitle it to a place in the bill of fare of the economic poultry-feeder. Smaller wheat, the majority plump but of inferior quality for milling, may be purchased at 1s. a bushel cheaper, but even at that price we think the poultry-keeper might find better grains that do not cost so much money. Many fall back upon what is popularly known as “poultry corn,” a concoction that is put together not so much with regard to the welfare of the hens that are to eat it as to provide a substantial profit for the dealers who retail it. “Poultry corn” generally contains a large proportion of maize, which for some reason is believed by many corn merchants to be the ideal grain for poultry under all conditions. Then there is a little light wheat, some light oats, and inferior barley, a small quantity of dari, besides a sprinkling of rubbish of no particular variety. This mixture is sold cheap—or, at any rate, cheap in comparison with better-class food—and the amateur who uses it fondly imagines that he is economising with his feeding. But he is labouring under a mistake, for such mixtures have little feeding value, and they are put together without regard to the characteristics of the various grains.

PROPERTIES OF FOODS.

The poultry-keeper should know something of the relative feeding value of certain cereals as well as their suitability for various purposes. Maize, the most popular poultry grain with many unsophisticated poultry-keepers, is decidedly useful in its place, but it is not of a suitable character to give to fowls in a small run. For farm poultry in winter it has no superior, and possibly, during cold weather, a little may be mixed with other grains for birds in somewhat exposed, confined pens; but the back-yarder can have little use for maize, which is of too oily and heating a character for the conditions under which his fowls are kept. Barley is another grain that small poultry-keepers can dispense with on account of its heating nature, although in very cold weather a proportion of not more than half may be given with other grains for a change. Oats, in the absence of wheat, make the most useful staple grain for the small poultry-keeper, but so many light samples are sold that buyers should stipulate for a good plump white oat and see that they get it. In many places oats can be purchased with the ends clipped off, and these, though more expensive, are naturally of greater feeding value. Dari is useful for a change, and so are white Canadian peas, the latter and buckwheat being specially useful in winter. It is highly desirable to give the birds a change of food, for when kept upon one grain entirely they become somewhat stale. The household scraps certainly provide some variety, but if a few changes are made among wheat (if cheap enough), oats, dari, buckwheat, and peas the birds will appreciate them.

MINOR NECESSARIES.

There are several necessities for poultry that must be included under this heading. Grit is one of the most important, and its function is to assist in grinding the food in the gizzard. If the gizzard

of a dead fowl is examined it will be found to contain numerous small stones, many worn smooth, that have assisted in the process of digestion, and these smooth stones may often be found in the excrement, as they pass through the system when their function is performed. Fowls running at liberty will make frequent excursions to a road or path where small stones are to be found, and it is therefore obvious that birds kept in close confinement must have a regular supply of this necessary commodity close at hand. Flint makes the best grit, as it is invariably sharp, and though stones may be broken up into small pieces by those who can obtain a supply of flint, the finished article can be bought so cheaply (from 2s. 6d. to 5s. per cwt.) that no poultry-keeper should be without a quantity of grit, and every small run should contain a boxful, so that the hens may use it as required. Lime is also necessary to provide material for the formation of egg-shells, and it is usually given in the form of oyster-shells, crushed and broken into small pieces, which may also be purchased very cheaply. Broken crockery, mortar, and any material containing a large proportion of lime serves the same purpose, and if hens in close confinement are kept without this calcareous matter, it is inevitable that shell-less and thin-shelled eggs must result, for fresh supplies of lime are needed to meet the demand entailed by constant egg-production.

GREEN FOOD.

An important item for fowls kept in close confinement is that generally known as green food, which comprises uncooked vegetables, roots, or even grass. When one has a garden we can generally obtain a supply of cabbage or lettuce leaves sufficient to last a small flock of birds all the year round, and some keen poultry-keepers sow a small patch of rye to be cut for the fowls in the early spring, when there is very little green food of other kinds. In summer it is a comparatively simple matter to obtain an ample quantity of greenstuff, for if everything fails some young grass can be gathered for the purpose, and we know some people who give their fowls the lawn clippings. But in winter there is often a real difficulty, and the best plan when nothing else is obtainable is to use swede turnips. Mangolds, we find, are more likely to cause scouring, but swedes possess some feeding value, as well as the necessary vegetable matter, and all that one has to do is to split them in two and hang them on the wire netting within reach of the birds, when they will peck out the inside and leave the skin like a shell. If put upon the ground the roots are liable to be trodden about in the dirt. Cabbage leaves and other greenstuff should be hung up in the same way, though if one possesses a food chopper it may be put through the machine and given to the fowls either separately or with the soft food. It is not necessary to give a great quantity, though in summer old birds may be given more greenstuff and less corn; but the fowls should have a small amount every day. Birds that run at liberty or in large grass enclosures will find greenstuff for themselves, though in the latter case it must be remembered that during the winter, and also in a very dry, hot summer, there is no young growing grass obtainable, so that something should be given to supply the deficiency.

AMONG THE BIRDS IN JUNE.

By J. W. HURST.

FEEDING.

This is always a seasonable subject, but the calendar must not be allowed to dominate the actions of the feeder. The diet must be seasonable in accordance with the prevailing climatic conditions, and rations and their constituents must be regulated by common sense and not by dates. The character of the weather in May, for example, has led experienced feeders to make alterations that are often not required until June—and who shall say what will be necessary in June? A very common trouble at about this season, however, is that condition of satiety that is found among the young fowls being reared by the inexperienced. The novice calls, and rattles the food bucket, without finding that eager response that characterised the conduct of his birds earlier in the season; and many of those that make a show of appetite soon turn from the food. Not only are the birds finding much more food on their range, but they are probably being fed four times during the day when two or three would be quite sufficient, the allowance at each meal being also perhaps much too large. The beginner so often overdoes it, and is usually afraid of giving too little food.

Although soft food is the food for market chickens, and, if properly fed, should be sufficient for the purpose, the mismanagement of the feeder will make the birds go "off their feed." When this happens a judicious use of small grains, alternated with smaller allowances of mash and longer intervals between meals, will help to restore a desirable normal healthy appetite. In any seasonable rearrangement of feeding the extent of the range and its natural food must be duly estimated, but as a rule the quantity as well as the frequency may be reduced, with a corresponding increase of activity and progress in growth and development. In this connection full advantage should be taken of newly-mown meadows, the value of which is too often overlooked by chicken rearers.

SUNSPOTS AND SHADE.

"A nice sunny position facing south" is a common injunction of the teacher, and the poultry-keeper almost instinctively looks out for such places in which to put his coops and arrange his pens; but we have arrived at a period when sunspots may be inimical, if not fatal, unless there is some accompanying provision of shade—produced either naturally or artificially. Even at the hottest time of the year the birds want sun, but not too much of it. The adult fowls that have the freedom of a diversified range may be trusted to act judiciously in their selection of sun and shade, but chickens whose coops or hutches are placed in an open situation have not much choice, even if they possessed the necessary experience, and consequently in some cases they suffer very considerably and are correspondingly unthrifty. In the early morning, when there is still some slight moisture on the grass, and towards the close of the day, when there are insects to be found, the birds enjoy the sun; but during the middle of the day they require shade, preferably of the patchy description provided by fresh foliage beneath

which there is the suggestion, if not the actuality, of comparative coolness. Early morning foraging is profitable in these days, and the sun rises before four o'clock, although for quite young birds the grass is not always fit until later. Proximity to hedges and covert is not only essential to the well-being of the fowls, but, if the ground vermin be kept under, such situations afford protection from birds of prey, and by encouraging insects provide food and exercise.

SEASONABLE OPPORTUNITIES.

In all our work among the birds we must always remember their end, and the opportunities of the present season are exceptional. Such normal opportunities as are provided by the Epsom Summer Meeting and Ascot's four days are this year merged in the succession of events that mark a Coronation year, and the producer of marketable poultry has quite unusual chances. During this month the markets will be supplied with a very much larger output of home-reared birds, and the quality and finish of the produce must be really first-class to participate in the enhanced values of special demands. The warmer weather is also a factor demanding special consideration in marketing, a slight delay in the transit or disposal of consignments being quite sufficient to depreciate the value of dead poultry, and the first sign of unfitness results in condemnation in the markets. Great care in killing, cooling, and general preparation is therefore required; whilst good packing and quick transit are essential, as well as prompt response to the suggestions of reliable salesmen.

JUNE NOTES FOR AMATEURS.

TO many poultry-keepers this is one of the busiest months of the year. The show season opens, and the fancier is busy with his exhibition birds, and especially in getting his early chickens into condition. The breeder of table-chickens and ducklings likewise reaps his principal harvest and finds his time fully occupied. But to the average amateur and small poultry-keeper the month of June is generally regarded as a quiet time. Breeding is finished, chickens are able to take care of themselves, and there is no longer any necessity to work at forced pressure, even if the amateur ever does that. But though we may rest upon our oars, as it were, there is plenty of regular work to be done, and one or two special duties need to be performed about the present time.

As regards laying hens, some people say that it does not pay to produce eggs in summer, when the price falls so ridiculously low. That is not correct. It is true that it would not pay to buy hens for laying just now, but if you have the hens you may as well produce the eggs, even though you can only get a halfpenny each for them. As a matter of fact, nearly every hen will lay just now, and do it upon much less food than she would require in winter. If you feed in the same manner as you did three or four months ago you will soon get the birds too fat, they will cost you more, and you will get a smaller return. So that, though eggs realise only about a third of the winter value, they should be produced at very nearly half the cost.

Those who have chickens should give them every opportunity to grow just now. There is not much

difficulty on an open range, but when birds have to be closely confined the great thing is to provide all the necessities they would find for themselves when running at liberty. Green food, animal food, and grit are the three chief necessities, and with these, a clean and airy house, and ground as fresh as you can find it or make it, young birds should grow.

Breeding-pens can be broken up at once. To the average amateur breaking up a breeding-pen consists solely in getting rid of the cock, whose room will now be more welcome than his company. If he is a valuable stock bird a small pen should be found for him, or he can be run with a flock of early cockerels. If of no particular value, however, he will make an acceptable dish when boiled for three or four hours. If the birds can be moved to a fresh run so that the old one may have a rest, so much the better; but I am afraid very few amateurs have enough room to do that.

Red mites delight in June weather, and we must continue to wage war upon them if we are ever to have the upper hand. Though the interior of the houses, and especially the perch sockets and cracks, may have been dressed with Penetras last month, we shall probably find, on examination, further signs of the pests, and by giving them another dose we may possibly get the better of the fight for a time. But it will be just as well to look round again in three weeks' time and repeat the dose if necessary.

Nest-boxes must also be looked after. They are the favourite resort of the active little hen flea, which, if allowed to multiply, soon presents as formidable a host as the red mite. If any material has remained in the nests for several weeks, clear it out and burn it, dress the boxes with Penetras or paraffin, and put a shovelful of earth in each box, together with some hay to line it.

This is the favourite time for preserving eggs in water-glass—a method that has been fully explained elsewhere. As I know that amateurs are very fond of this admirable process, I would like to point out the necessity of using only fresh eggs. The other day a lady told me she had put 200 eggs down. She had bought them, she said, from a grocer, and the grocer had said they were the best kind for preserving, as they were not new laid! An egg for preserving *should* be new laid. If it is not fresh when it goes into preservation it certainly will not be fresh when it comes out; and if it contains any matter to decompose, such as a germ brought to life through being sat upon for some hours, the water-glass will not prevent the natural course of decomposition.

The appliances of the amateur are not numerous, but such as he possesses need to be taken good care of, and those used during the hatching season should be stored away for future use and not left to rot out of doors. Incubators should be overhauled, tanks emptied, egg-drawers cleaned out, lamps emptied and cleaned, capsules and regulating apparatus stored away. Brooders should be similarly treated, and before being put away it will be a good plan if the woodwork is painted outside and dressed with limewash or some other insect destroyer inside. Coops and sitting-boxes should be served in the same way.

Be sure to have houses well ventilated, both for old and young stock. It is no hardship for fowls to sleep in open-fronted houses, and in summer time, at any rate, shutters should not be closed.

PIG-KEEPING FOR SMALL-HOLDERS.

THE whole question as to whether or no "it pays to keep pigs" turns principally on three things: the price of pork and bacon, the price of food-stuffs, and, last but not least, what proportion of the food actually consumed by the pigs can be produced on the holding itself. Let us take them in order, and with regard to the first point it will be noted that rarely have bacon and pork reached such high prices as during the last eighteen months, or shown a steadier tendency to maintain this high level. There are several reasons for this, but the immense home consumption of pigs in America, so reducing the surplus for export; together with a great reduction in the numbers of the pig population in Great Britain, caused by the long period of low prices for pork and bacon so far as the *producer* was concerned, were undoubtedly largely responsible for the home demand overtaking the supply, with a consequent great rise in price, very welcome to the breeder and feeder of pigs, however it may have appeared to the buying public. Though prices have fallen somewhat, there seems at present little prospect of a fresh American invasion of our market so far as bacon or hams are concerned, and the by-products, such as lard, bristles, &c., also maintain their price.

As a set-back to the profits, the high prices of feeding-stuffs must be taken into consideration, and until more cereals are ground in the mills of this country the farmer will continue to be more or less handicapped by the high price of offals. But unless a fair proportion of the food for the stock can be produced on the holding itself, the profits from pig-keeping can never be considerable, and may, indeed, prove to be non-existent. Therefore it is imperative that pig-keeping should not be undertaken unless a fair supply of home-grown produce can be relied on, of which potatoes, green foods, roots and skim-milk form the chief items. This is where the cottager who has a good garden or allotment scores, as much that would be otherwise wasted, including the household scraps, can be converted into profit through the pig, without the need of purchasing anything but meal and bran. Many pig-feeders arrange to collect waste food from houses, hotels, schools, &c., either paying a small sum in cash for it or giving an equivalent in the shape of manure, &c. But one word of caution is necessary in this connection. It is that, from whatever source the wash may be obtained, it must not contain salt or soda, as both these are dangerous to pigs, and food that has been prepared with either is not fit for the purpose, nor should the greasy water that has been used for "washing-up," and which usually contains soda, be poured into the pig-tub, as is sometimes done.

A very good plan for pig-keepers who keep more than one or two pigs is to have a copper going in which all waste vegetable products, small potatoes, swedes, &c., can be boiled. These, mixed with bran, middlings, ground oats, molassine meal, &c., make excellent wash for the breeding stock. One economical dairy farmer known to the writer never uses ordinary pump-water to mix up the pigs' food, but takes it instead from a tub into which all the water used in washing the dairy utensils has been poured. This contains quite an appreciable quantity of fat, however carefully churning and

making-up have been performed, and the pigs get the benefit of it. Very little can be done without a supply of skim or separated milk for fattening pigs, and here the butter-making farmer and cow-keeper have a decided advantage.

Good housing accommodation is not a very difficult or costly matter so far as pigs are concerned: dryness, warmth (pigs feel the cold probably more than any other class of farm stock), and sufficient space and air are of course essential, but a little care and enterprise will usually suffice to render any existing pig-sties comfortable and healthy, and others can be erected inexpensively by degrees as they are needed. Too many pigs should not be put together in one sty, as they do not thrive so



ON A BERKSHIRE SMALL-HOLDING. [Copyright.

well when crowded together, but where large numbers of young pigs are being dealt with, the plan described a little later on will answer. The sleeping quarters should be slightly raised above the ground, and are preferably floored with logs, old railway sleepers serve the purpose well, and are cheap and durable, and plenty of dry clean bedding (not barley straw, which harbours lice) should be provided. If the outer court, where the pigs are fed, is given a slight fall, or a shallow open drain cut down the middle, this will keep it dry, for dirt and damp are largely responsible for most of the pig-keeper's troubles. Plenty of grit, in the shape of cinders or small coal, should always be given, as pigs require it to aid digestion, and it prevents them from rooting about in an attempt to seek it for themselves; and all stock, except fattening pigs approaching their final stage, should be given a daily run out. This is especially important with breeding sows, whose noses should, of course, be rung, when they may be turned out into a meadow without doing any damage, and with young pigs if they are to grow and develop satisfactorily. Green stuff from the fields or garden, mangolds, or grass should be given every day, unless the pigs are turned out to graze.

The writer recently saw a very ingenious provision for the young pigs, after they had left the sows, on a large farm in Wiltshire, where great numbers of pigs were continually being reared. An open space of ground, lying high and dry beyond the farm buildings, was walled round with

hurdles thickly covered with straw, secured to stakes firmly driven into the ground, the entrance to the square being on the south side. On the north and east sides there was a double wall of hurdles, the space between being covered in with a slanting roof, also of hurdles heavily thatched, the covered passage thus formed being open at each end, like an L-shaped tunnel. In this warm yet airy runway the young pigs (varying in number from thirty to fifty) slept, or sheltered when it was cold, while they were fed and could run about in the open portion of the enclosure, protected on all sides from the wind, but open to the air and sun. The pigs thrived remarkably well under these conditions, were easily looked after and kept clean (the tunnel was wide enough to admit a barrow, and was kept warmly bedded with straw), and the whole erection could be simply removed on to fresh ground when required, or the hurdles used for other purposes. When it can be obtained without difficulty, dried bracken makes splendid bedding for pigs, and costs nothing except for cutting and cartage, and it makes excellent manure when put on the land. Great care should always be taken of pig manure, as it forms one of the richest and most concentrated of natural fertilisers, and a proper use of it will add largely to the profits directly obtained from pig-keeping.

NORTHERN UTILITY POULTRY SOCIETY.

VISIT TO MODEL FARM.

THE first outing for the summer was arranged for Saturday, when fifty members and friends journeyed to Preston by train. Here they were met by wagonettes and conveyed to Mr. William Barron's poultry-farm at Bartle—the scene of the laying competition held under the auspices of the Utility Poultry Club. Here they were met by Mr. Barron, and accompanied around the farm, which is being developed on thoroughly practical and up-to-date lines. It is only twelve months since the place was taken over as a poultry-farm by Mr. Barron, and the transformation says much for his ability and progressive ideas. In course of time it will, no doubt, be one of the best arranged plants in Lancashire. After examining the various brooder-houses, well filled with chickens of various breeds, the breeding-pens, containing the winners in the Burnley Competition, &c., a visit was paid to the incubator-house, and after inspecting the various machines, the first part of the programme was brought to a close, and the journey continued to Mr. Tom Barron's farm at Catforth.

This is the third occasion that the members have visited the Catforth establishment, and the popularity of the farm seems to increase with each visit. On arrival they were welcomed by Mr. and Mrs. Barron, and an inspection of the farm commenced. The first part of the farm to be visited was the brooder-house, which has accommodation for over 2,000 chickens, and is fitted with acetylene gas for use in the early season. Next the breeding-pens were visited and the various breeds carefully inspected. Four breeds are kept, including White Wyandottes, White Leghorns, Buff Orpingtons, and Buff Rocks.

POULTRY RECIPES

MAYONNAISE OF FOWL.

Carefully remove the skin and bones from the remains of a cold roast or boiled fowl—or have one cooked for the purpose—and cut the flesh up into small neat pieces. Season these pleasantly and set them aside in a cool place until required. Next prepare a very dainty salad, introducing as large a variety as possible of vegetables suitable for the purpose, and have ready at hand some skilfully-prepared mayonnaise sauce. When required put a layer of the salad in the salad bowl, and upon this arrange part of the fowl; then cover with more salad, and so on in this order until the dish is sufficiently full. Pile the salad up high in the centre, coat it entirely over with the sauce, and ornament the surface tastefully with an arrangement of hard-boiled eggs cut in quarters, slices of bright-red boiled beetroot stamped out in small fanciful shapes, carefully picked leaves of fresh watercress, pickled walnuts cut in slices or quarters, and a light sprinkling of very finely chopped parsley over all. Keep the dish in a cool place until the salad is required.

FOWLS À LA PIQUANT.

Cut up a cold cooked fowl into small neat joints and slices and place these in a bowl; sprinkle them freely with a sauce prepared as below, and set them in a cool place for an hour or two before using, tossing the meat occasionally so that every part may be well seasoned. Have ready some carefully cooked green peas, French beans, or any other vegetable which may be preferred, and season these pleasantly, then form them into a flat bed on a convenient-sized dish and arrange the prepared fowl in neat order on the top. Garnish round about with sprigs of fresh parsley, slices of pickled beetroot, and hard-boiled eggs cut in quarters. To prepare the sauce, put into a basin five tablespoonfuls of fine salad oil, one tablespoonful each of malt, tarragon, and chilli vinegar, a teaspoonful each of minced parsley and onion, two tablespoonfuls of finely-minced cucumber, and a seasoning of salt and pepper; mix well and use as required.

GALANTINE OF FOWL.

This is rather a troublesome dish to prepare, but when all the small details are carefully carried out the result is so pleasing and satisfactory that one feels amply repaid for the little extra labour involved. Prepare a large, plump bird in the usual manner; then divide it down the back and press it out flat on the table, skin downwards; remove the bones very carefully so as not to injure the skin at all, then spread over the meat a layer of well-seasoned veal forcemeat—using fresh butter for this instead of suet—and cover the forcemeat with hard-boiled eggs cut into small dice and roughly-chopped parsley. Roll up as tightly as possible, cover with slices of very fat bacon, and secure firmly with narrow white tape. Put the galantine into a stewpan with sufficient good white stock to cover it, then add a bunch of savoury herbs, an onion stuck with half a dozen cloves, and two or three small carrots scraped and cut in small pieces. Bring the liquid to the boil, then draw the pan on one side and simmer the contents gently until the fowl is sufficiently cooked, after which remove

the stewpan from the fire, but allow the galantine to remain in the liquid until the latter is nearly cold, then take it up, and when quite cold take off the tape binding. Brush the surface over with a good thick coating of glaze, garnish the edge of the dish tastefully with slices of fresh lemon, roughly-chopped aspic jelly, and sprigs of fresh parsley, or small bunches of carefully washed and seasoned watercress; sprinkle the galantine lightly with a mixture of finely-chopped parsley, sifted egg yolk, and lobster coral, and serve as required.

CHARTREUSE OF CHICKEN.

Take a plain Charlotte mould and coat the inside entirely with liquid aspic, then decorate it tastefully with an arrangement of ripe tomatoes cut in thin slices, strips of hard-boiled white of egg, tiny slices of pickled walnuts, and leaves of fresh watercress; press the various items firmly into the coating, then brush them over, very lightly and carefully, with more aspic and set the mould in a cool place until the decoration is quite firm. When the mould is ready fill it with a dainty chicken purée prepared as follows: Take the meat of a carefully-cooked chicken, cut it up into tiny pieces and put these into a mortar, or a very strong basin; season pleasantly with salt, pepper, and mace, add a slice of fresh butter or a few tablespoonfuls of thick cream, and two or three ounces of finely minced, lean, cooked ham or prime bacon. Pound the whole to a perfectly smooth paste and press it gently but firmly into the prepared mould, being very careful in doing so not to displace the decoration, as that would considerably spoil the appearance of the Chartreuse when turned out. Make the top quite level and smooth, and set the mould in a cool place until the contents are quite firm, then when required turn out carefully on to a suitable dish; garnish round about with a full close border of properly prepared, well-seasoned watercress, and upon this arrange tastefully the egg yolks cut in halves or quarters, and long narrow strips of fresh cucumber and bright-red boiled beetroot. When nicely done the dish presents an exceedingly attractive and most appetising appearance.

A Chinese Smell.

A Liverpool poultry-dealer has "found trouble" arising from dealing in Chinese frozen poultry, and is avoiding certain markets. Sued by the merchants who sold him the goods, the defendant said he thawed the birds out in his kitchen, and took them to various markets, and he was told that if he went there again, after selling these birds, he would be lynched. He was told that at Accrington, where he had sold some of these birds, there were two summonses waiting for him, but he did not intend to go to Accrington again. Asked by his Honour if the birds were good when sold, defendant said it was impossible to tell until they were thawed out, and then they could be smelt. (Laughter.) "The worst of it is," added defendant, "I cannot go back to some of my markets, and this has broke me." Defendant added that some of the birds had been condemned by the local authority, and he sent the condemning notes to the plaintiffs.

MILK FOR POULTRY.

By A. G. SYMONDS, Centonook, N. H.

ONE of the best, if not the best, animal foods for poultry is milk. All of the ingredients necessary to form perfect animal food is found in skimmed milk. It makes no difference whether it is sweet or sour, or how it is fed, whether alone or with other foods, it answers its purpose equally as well.

Probably the wet mash system had its origin in the idea that milk could not be fed mixed with ground grains. It is no doubt the proper way to feed it, for in this way each fowl shares alike the quantity of milk fed. If fed in liquid form some hens will make gluttons of themselves and injure their health in this way.

It may be fed in a crumbly or Dutch cheese form. This is a very good way in which to feed it and very good results will attend this method. Of course, it means the souring of the milk to reach the curdled and cheese state. In warm weather there would be little difficulty in creating this condition of the milk, but in cold weather it would be necessary to keep it warm until curdling process took place. It may be fed in troughs the same as a mash, and the fowls will devour it very readily.

I have known other poultry-raisers and a good many farmers who follow this plan of feeding milk to poultry. It is a good way of disposing of skimmed milk profitably. No farmer keeping both hens and cows need buy beef scraps or other animal food for his hens. I have paid five cents per eight-quart can for skimmed milk, and believe it was the cheapest animal food I ever bought.

The whole secret in feeding milk lies in not feeding too much, using good judgment and the proper method in supplying it to the flock.

For several years I followed the following plan in feeding milk with excellent results: From the time the chickens were hatched until they were four or five months old their entire diet was composed of a mash, wet and thoroughly mixed with skimmed milk. This mash constituted their morning meal from that time on until maturity. It was not left off even then, but fed to the laying pullets. Rapid growth, popular development, and strong constitutions that produced good meat in the males and lots of eggs in the females. This was the only animal food given them during the winter, though, of course, plenty of bugs, worms, and insects were found by them during the summer.

PATENTS FOR POULTRY-KEEPERS.

THE *Scientific American* for December 24 contains an article on "Queer Poultry Inventions," which gives various entertaining instances of the more or less misapplied ingenuity of inventors. Jeremiah Cory, who kept bees on his poultry farm, appears to have been troubled by the bee moth, which, like other moths, paid its visits by night. So he fitted his hives with sliding doors and connected his hen-roosts up with the hives by links and levers, &c. At nightfall, when all respectable fowls mount to their roosts, Mr. Cory's birds one by one retired to rest, and automatically closed the doors of the hives and shut out the dreaded moth. In the

morning the descent of the hens opened the doors of the hives and set free the occupants for the labour of the day. Sanford Baker was concerned at the damage done to his garden by the evil habit of scratching contracted by his fowls. A piece of spring wire bent double, with a clamp at the bend, was fastened to each offender's leg, the wire-ends extending backwards and downwards. Each time the fowl attempted to scratch she would be hindered by the wires, and the spring would force her forward. It does not require much ingenuity to perceive that if the fowl obstinately persisted in her attempts Mr. Baker's device would walk her out of the garden. Lazy fowls are forced to take exercise by a treadmill. To get their food they have to go upstairs, and must keep going to remain near the food. We all know how fowls are tormented by tiny parasites. Mr. Wilson, of Texas, places a coil of lint saturated with grease in such a position that when the fowls are feeding they cannot help rubbing the grease on their necks. Mr. Shanahan cures hens addicted to the evil habit of eating their eggs by a simple device. An egg, an electric battery, and a metal plate—and we have all the apparatus necessary for an alarming shock or even for electrocution. But the palm must be given to Mr. Andrew Jackson, jun., of Munich, Tenn., whose chickens were of such a pugnacious disposition that many of them lost their sight in their desperate encounters. This caused Mr. Andrew Jackson, jun., to think furiously. He became convinced of the urgent need of spectacles for the rowdy creatures, and accordingly devised suitable pince-nez, and after experimenting on their suitable adjustments he solemnly patented the device. We ourselves are thinking of taking out a patent for encouraging hens to lay. The laying box is fitted with a hinged trap-door. This descends automatically when the egg is laid, deposits the egg below, and rises again. The hen having, as she thinks, performed her task satisfactorily, rises to behold the prodigy. Not seeing it, she thinks she has made a mistake. *Verb. sap.*

THE ORPINGTON.

A BOOK on this breed has recently been published by the Reliable Poultry Journal Co., Quincy, Ill., that should be in the hands of all breeders of Orpington fowls. It treats of the White, Buff, and Black varieties, with a chapter on the varieties which are not included in the American standard, and tells the reader how to select and mate for best results. Care, feeding, and management are fully discussed. This new breed book is comprehensive in text and well illustrated. It conforms to present standard requirements. A special chapter on preparing fowls for exhibition is included in the book. The book was edited by J. H. Drevenstedt, a breeder and judge of twenty-five years' experience, and a member of the Standard Revision Committee, 1910.

Ohio Experiment Station.

Mr. Ross M. Sherwood has been appointed Poultry Experimentalist at the Ohio Station, Wooster. Mr. Sherwood was trained at the Iowa State College.

MARKETS & MARKETING.

WEEKLY REPORTS

Week Ending April 29.

Young spring chickens were somewhat scarce, and made good prices. Goslings were also scarce, and the few there were sold well at prices ranging from 6s. to 8s. each. New-laid eggs were selling well, and were realising from 8s. 6d. to 9s. 6d. per long hundred. There was a fairly good supply of plover eggs, and purchasers were not wanting.

Week Ending May 6.

There was a decided improvement in the general tone of the market. Spring chickens were still extremely scarce, and owing to the steady demand there was no slackening in values. It is possible that some producers are holding back their supplies in view of the Coronation, hoping to obtain fancy prices. This is doubtful policy, we think, and since prices ranged high it would be better to dispose of the produce without delay.

New-laid eggs were in good demand, and sold readily at from 9s. to 9s. 6d. per long hundred.

Week Ending May 13.

Both the supply of and the demand for poultry showed an increase, and prices for spring chickens remained very steady. Goslings and ducklings were fairly plentiful, but prices remained firm.

New-laid eggs were plentiful, but the demand being good, prices maintained a fairly high level.

Week Ending May 20.

The markets were rather quiet, and there was practically no alteration from the preceding week. Spring chickens were present in fairly good quantities, and some really excellent birds were on sale.

English new-laid eggs were somewhat short, but very heavy imports were received from Russia, owing to the fact that the pickling season in that country is now pretty well over.

POULTRY IN ORKNEY.

A SERIOUS MORTALITY.

THE Congested Districts Board, in their poultry improvement scheme in the Orkneys, are confronted with a very serious problem. It seems that there is an extraordinary epidemic of tuberculosis among poultry throughout the Orkneys, and extensive losses are being experienced among the crofters and small-holders of these far northern districts, whom the operations of the Congested Districts Board are designed to benefit. It is, of course, well known that, as in the western isles, human tuberculosis prevails to a deplorable extent among the Orcadians. This is, no doubt, largely due to faulty hygienic conditions in regard to housing—as well as to climate—and one can imagine that if the housing conditions of the people are not what they ought to be, the conditions under which the live stock is reared and kept may also show room for improvement. The extent to which tuberculosis prevails among the cattle stock of Orkney came under the notice of the Departmental Committee which took evidence last year regarding the work of the Congested Districts Commissioners. One witness gave it as his opinion that half the byres in Orkney were infected with this disease, and deaths among

stock were frequent. A further statement by a farmer was that he had lost four cows in one year from what he believed to be tuberculosis, so that the condition of matters so far as this is concerned is a matter of serious concern. What connection there may be, if any, between the prevalence of human tuberculosis and tuberculosis among the domestic animals of Orkney is a matter for the experts to determine, but it is certainly suggestive that a great proportion of the poultry population of the Orkneys is affected with tuberculosis, with a consequent considerable mortality. It is, of course, a well-established fact that tuberculosis among domestic fowls is not peculiar to these islands alone. Those who have experience in poultry-rearing know that fowls are quite susceptible to the development of tuberculosis almost anywhere if due regard is not paid to the conditions under which they are kept, and the abnormal extent to which the disease prevails in Orkney would point to a lack of sufficient attention in regard to housing and the need for strenuous measures being adopted in order that the serious avian mortality of these districts may be checked. It is understood that steps in that direction are being taken by the Congested Districts Board, and that some interesting investigations are likely to be instituted in regard to the matter.—*Aberdeen Free Press.*

Brooder-Reared Chickens.

Particular attention must be given to ventilation and the adequacy of space as the birds in brooders make any progress in growth and development. Defective management in these particulars may be detected by the unpleasant odour that is noticeable when first opening up these appliances in the morning, diarrhoea being the cause of the odour and the unsuitability of the conditions the very common cause of the diarrhoea. It is always as well to avoid any near approximation to the advertised capacity when putting chicks in a brooder, and to commence the hardening-off process as soon as possible, transferring the birds to cool brooders at the earliest safe date—and then on to hutches or chicken arks. They must be encouraged to use the open-air run from the first, and the more they can be induced to do so the easier and quicker will the hardening process be. Feed them in the open whenever this is possible, otherwise in the *outer* compartment of the brooder, but never in the brooding or warmest section of the appliance.

A Big Poultry Food Mill.

The new Cyphers Company's Poultry Food and Alfalfa Mill at Chicago has just been completed. It has cost \$140,000, and has a capacity of more than 200,000 bushels. It can turn out twelve car-loads of food per day, with possibilities of that quantity being trebled.

Orpingtons in America.

The *American Poultry World* says that "Orpingtons are crowding and overtaking other popular breeds at poultry exhibitions held in the South, South-West, New Jersey, New York, and Pennsylvania, but in New England no appreciable headway is being made." This, our contemporary suggests, is due to the New Englanders' prejudice against white skin and legs.

New Zealand Utility Poultry Club.

The annual report of this society has been received, containing reports of the laying competition to date, and of the Poultry Conference held in November last, as well as an announcement of the next competition, which begins on April 1 next.

TABLE OF PRICES REALISED FOR HOME, COLONIAL, AND FOREIGN POULTRY, GAME, AND EGGS DURING THE FOUR WEEKS ENDING MAY 20, 1911.

ENGLISH POULTRY—LONDON MARKETS.

Description.	PRICES REALISED DURING THE MONTH.			
	1st Week.	2nd Week.	3rd Week.	4th Week.
	Each.	Each.	Each.	Each.
Surrey Chickens	3/6 to 5/6	3/6 to 5/6	3/6 to 5/6	3/6 to 5/6
Sussex "	3/6 " 5/6	3/6 " 5/6	3/6 " 5/6	3/6 " 5/6
Yorkshire "	3/0 " 4/6	3/0 " 4/6	2/3 " 4/6	2/3 " 4/6
Boston "	3/0 " 4/6	3/0 " 4/6	2/3 " 4/6	2/3 " 4/6
Essex "	3/0 " 4/6	3/0 " 4/6	2/3 " 4/6	2/3 " 4/6
Capons	5/6 " 7/6	5/6 " 7/6	5/6 " 7/6	5/6 " 7/6
Irish Chickens	2/6 " 3/9	2/6 " 3/9	2/3 " 3/6	2/6 " 3/6
Live Hens	2/3 " 3/0	2/6 " 3/0	2/3 " 3/0	2/6 " 3/0
Aylesbury Ducklings ..	4/6 " 6/0	3/6 " 5/0	4/0 " 5/0	3/6 " 4/6
Poussins	1/4 " 1/8	1/6 " 1/9	1/4 " 1/8	1/4 " 1/8
Goslings	6/0 " 8/0	5/6 " 7/0	5/6 " 7/6	5/6 " 6/6
Turkeys, English ...	— " —	— " —	— " —	— " —
Guinea Fowls	2/6 " 3/6	2/6 " 3/6	2/6 " 3/6	2/3 " 3/6

ENGLISH GAME—LONDON MARKETS.

Description.	PRICES REALISED DURING THE MONTH.			
	1st Week.	2nd Week.	3rd Week.	4th Week.
	Each.	Each.	Each.	Each.
Grouse	—	—	—	—
Partridges	—	—	—	—
Pheasants	—	—	—	—
Black Game	1/0 to 1/3	1/0 to 1/3	1/0 to 1/3	1/0 to 1/3
Hares	1/0 " 1/6	1/3 " 2/9	1/3 " 2/9	1/3 " 2/9
Rabbits, Tame	—	—	—	—
" Wild	—	—	—	—
Pigeons, Tame	—	—	—	—
" Wild	—	—	—	—
Hazel Duck	—	—	—	—
Snipe	0/9 " 1/0	0/10, 1/0	0/8 " 0/11	0/10 " 1/0
Plover Eggs, doz. ...	2/6 " 3/6	2/6 " 3/0	2/6 " 3/0	—

ENGLISH EGGS.

MARKETS.	PRICES REALISED DURING THE MONTH.			
	Per 120.	Per 120.	Per 120.	Per 120.
LONDON	8/6 to 9/6	9/0 to 9/6	8/6 to 9/6	8/6 to 9/0
Provinces.	Eggs per dozen.	Eggs per dozen.	Eggs per dozen.	Eggs per dozen.
MANCHESTER ...	0/9½	0/9½	0/9	0/9
BRISTOL	0/11	0/11	0/10	0/10

FOREIGN POULTRY—LONDON MARKETS.

COUNTRIES OF ORIGIN.	PRICES REALISED DURING THE MONTH.			
	Chickens. Each.	Ducks. Each.	Ducklings. Each.	Geese. Per lb.
Russia	1/3 to 2/9	2/6 to 3/3	—	—
Belgium	—	—	—	—
France	—	—	—	—
United States of America	—	—	—	—
Austria	—	—	—	—
Canada	—	—	—	—
Australia	—	—	—	—

FOREIGN GAME. LONDON MARKETS.

COUNTRIES OF ORIGIN.	PRICES REALISED DURING THE MONTH.	
	Price Each	Declared Values.
Capercaillie	1/0 to 1/3	Game.
Black Game	0/9 " 1/0	Poultry.
Partridges	1/8 " 1/9	£1,066
Quail	0/8 " 2/0	£3
Bordeaux Pigeons	0/10 " 1/6	£2,618
Hares	2/0 " 3/0	£10,285
Rabbits	0/5 " 0/7½	£5,321
Snipe	—	£7,479
Totals	—	£9,448
	—	£55,013

IMPORTS OF POULTRY AND GAME. MONTH ENDING APRIL 30, 1911.

COUNTRIES OF ORIGIN.	PRICES REALISED DURING THE MONTH.	
	Price Each	Declared Values.
Russia	1/0 to 1/3	Game.
Austria-Hungary	0/9 " 1/0	Poultry.
France	1/8 " 1/9	£1,066
United States of America	0/8 " 2/0	£3
Other Countries	0/10 " 1/6	£2,618
Totals	2/0 " 3/0	£10,285
	0/5 " 0/7½	£5,321
	—	£7,479
	—	£9,448
	—	£55,013

IRISH EGGS.

Description.	1st Week.	2nd Week.	3rd Week.	4th Week.
	Per 120.	Per 120.	Per 120.	Per 120.
Irish Eggs	8/0 to 9/4	8/0 to 9/0	8/0 to 9/4	8/0 to 9/0

FOREIGN EGGS.

Description.	1st Week.	2nd Week.	3rd Week.	4th Week.
	Per 120.	Per 120.	Per 120.	Per 120.
French ...	7/6 to 10/3	8/0 to 9/6	7/6 to 11/0	7/0 to 10/6
Danish ...	7/6 " 9/0	8/6 " 9/6	7/9 " 9/6	7/6 " 9/0
Italian ...	7/6 " 9/6	8/6 " 9/6	7/0 " 9/0	7/0 " 8/6
Dutch	7/6 " 10/0	7/6 " 9/6	7/0 " 9/3	6/9 " 9/0
Russian ...	6/6 " 7/6	7/0 " 7/6	6/9 " 7/6	6/8 " 7/0
Roumanian ...	5/9 " 7/9	6/0 " 7/9	6/3 " 7/6	6/3 " 7/9
Galician	6/3 " 6/6	6/3 " 6/6	6/9 " —	6/3 " —

IMPORTS OF EGGS. MONTH ENDING APRIL 30, 1911.

COUNTRIES OF ORIGIN.	PRICES REALISED DURING THE MONTH.	
	Quantities in Gt. Hund.	Declared Values.
Russia	372,076	£126,903
Denmark	299,504	£121,965
Germany	72,032	£22,345
Netherlands	91,296	£38,577
France	79,586	£37,191
Italy	48,828	£20,279
Austria-Hungary	130,384	£47,733
Other Countries	115,531	£37,435
Totals	1,209,237	£452,428

POULTRY EXHIBITION AT THE FESTIVAL OF EMPIRE.

THE Poultry Division in connection with the Small Holdings and Country Life Section, Festival of Empire, forms a distinctive and most important feature. The arrangements have been carried out by a committee of gentlemen well known in poultry circles, including Messrs. L. C. Verrey (Chairman), R. R. Allen, Hy. Abbot, Edward Brown, F.L.S., E. T. Brown, C. A. House, S. H. Lewer, R. Meech, W. Tamlin, H. Wallis, and W. H. Walton.

The Committee have arranged for fifty-one breeding-pens of distinct and different varieties of poultry, all of which have been supplied by well-known breeders, forming the most unique collection of domestic poultry ever brought together. The Asiatic, American, and European races are represented by typical examples of their respective varieties. The birds are housed in a new and specially-designed house supplied by Mr. Randolph Meech, of Poole, Dorset.

The feeding arrangements have been entrusted to the Allen Poultry Company, Ltd., Sawbridge-worth, Herts, and these are under the supervision of the Committee, who will also see to the sterilising of all eggs laid during the Exhibition.

LIST of POULTRY EXHIBITS accepted by THE POULTRY DIVISION COMMITTEE (Small Holdings and Country Life Section), Festival of Empire.

Breed.	Variety.	Name
Andalusian	Blue	Messrs. Abbot Bros.
Ancona	Single-comb	Mr. G. M. Beresford-Webb
Aseels	—	Mr. E. Gardiner
Brahma	Light	Messrs. Abbot Bros.
Brahma	Dark	Messrs. Abbot Bros.
Campine	Silver	Rev. E. Lewis Jones
Campine	Gold	Rev. E. Lewis Jones
Cochin	Buff	Mr. Geo. H. Proctor
Dorkings	Coloured	Abbot Bros.
Dorkings	Silver Grey	Abbot Bros.
Faverolles	Salmon	Mr. T. C. Byrne
Faverolles	White	Miss S. Carey
Game	Old English	The Countess of Craven
Hamburgh	Silver-spangled	Mr. Charles Holt
Houdan	Speckled	Mr. Henry Eyde
Indian Game	Red	Messrs. Firth Bros.
Langshan	Black	Mr. Harry Wallis
Langshan	Croal	Capt. Ralph R. Allen
Leghorn	Brown	Mr. L. C. Verrey
Leghorn	White	The Llangamarch Wells P. F.
Leghorn	Black	Capt. Ralph R. Allen
Leghorn	Blue	The Bolton Model Poultry F.
Leghorn	Duckwing	Mrs. L. C. Verrey
Minorca	Black	Capt. Ralph R. Allen
Malays	Red	Messrs. Abbot Bros.
Orpington	Black (Single-comb)	Mr. W. M. Bell
Orpington	Buff	Miss S. Carey
Orpington	White	Mr. W. M. Bell
Orpington	Jubilee	Capt. Max de Bathe
Orpington	Spangled	Mr. Harry Wallis
Orpington	Cuckoo	Mr. William H. Cook
Orpington	Blue	Mr. William H. Cook
Plymouth Rock	Barred	Mr. Frank Neave
Plymouth Rock	White	Capt. Ralph R. Allen
Plymouth Rock	Buff	The Bolton Model Poultry F.
Polish	White-crested Blacks	Messrs. Abbot Bros.
Rhode Island Red	Single-comb	Mr. Chas. Moon
Rhode Island Red	Rosecomb	Mrs. Cooper
Redcap	—	Messrs. A. E. Wragg & Son
Spanish	Black	Messrs. Abbot Bros.
Sussex	Red	Messrs. John Bailly & Son
Sussex	Light	Messrs. John Bailly & Son
Sussex	Speckled	Messrs. John Bailly & Son
Wyandotte	Silver Laced	Mr. Henry Eyde
Wyandotte	Partridge	Mr. Richard Watson
Wyandotte	White	Mr. C. N. Goode
Wyandotte	Black	Messrs. Abbot Bros.
Wyandotte	Columbian	Mr. Hubert Wright
Wyandotte	Blue	Mr. James Turner
Yokohama	Duckwing	Mrs. L. C. Prideaux
Yokohama	Black Red	Mr. E. H. Turrell

SOUTH AUSTRALIAN POULTRY IN CEYLON.

SOME weeks ago a shipment of poultry was sent to Ceylon. The Minister of Agriculture (Hon. J. P. Wilson, M.L.C.) has received a report from the poultry expert, which states: "The following extract from a letter received from Ceylon will be of interest to our breeders. The writer, Dr. J. Llewellyn Thomas, F.R.C.S., a distinguished physician, is well known in Ceylon as a poultry-breeder, and is also prominent in scientific investigations. In the criticism of the birds it will be noticed how strongly the fancier element dominates. No pretensions are made by our breeders and at the poultry stations to development of exhibition points of White Leghorns. We content ourselves with strong constitutions, good type, and highly developed laying qualities. The reference to the English birds and the forthcoming test between them and the local birds reminds me that there are champions of the English type of White Leghorn. No doubt the non-laying qualities of that large white fowl known as the English show Leghorn assist to make in England that fine egg market of over eight millions sterling per year. With regard to the size of eggs laid by these pullets, it must be pointed out that the birds were hatched early, and had just started laying when shipped. The first few dozen eggs are generally small, but the size soon increases, and eventually will average well over 2oz. each."

Dr. Thomas writes: "The fourteen Leghorns dispatched by you arrived safely in the best of health and in fine condition. The pullets are beautiful specimens. I well understand that they are layers and not exhibition birds. Still they would not be a disgrace in the show-pens. I do not, however, think they have a chance against the exhibition birds bred in the island. Personally, I think the pullets far superior to the cocks. As show birds the males would have little chance against our country-breds. Mr. Cary and I both have bred better show specimens from laying strains. One cock is out and away better than the other. The second cock's comb has very uneven serrations, and there is a good deal of red about their ear lobes. They both are of different shape, but are very vigorous and sexually virile. We are well satisfied with the two pens, realising that they are layers and not merely bred for exhibition. The birds have now been ashore some six days. They are doing well and are well suited to our climate. Their runs have plenty of shade and sunshine. The birds do not appear to mind the heat a bit, the shade temperature being about 82, max. The birds are obviously young, and this will doubtless account for the size of the eggs. The size was a great shock to me—so very small; only one hen in each of the pens lays a decent-sized egg. As the pullets mature, I presume this point will greatly improve. In fact there has been an improvement since landing, but they are nowhere near the 2oz. egg which we frequently have from the Leghorns bred here."

"A planter's wife up-country has Australian White Leghorns of laying strains, and ten hens in one pen in twelve months laid over 180 eggs per hen. The country-bred pullets from there are also promising to lay as well as their parents. We have many importations of this breed from Australia and from England."—*Adelaide Chronicle*.

LATE-HATCHED CHICKENS.

THOSE who have failed to raise as large a number of chickens as they expected in the early part of the season need not feel discouraged, for there is still time to make up the deficiency by rearing a few broods hatched in early June, and they can be reared without difficulty, if carefully tended. The secrets of success with late broods, as discovered by the writer in the course of a long and varied experience in raising chickens of many breeds at all seasons, are disclosed in the following paragraphs:

1. The attendant must take the same interest in the late broods as was taken in the first chicks of the year, and must give them as full a share of attention as was found necessary for raising the early chicks. This is not often done, for the interest in one's work begins to flag when it becomes necessary to repeat the same operations month after month and to continue them into a time which to many seems unseasonable. Failure

3. It is of primary importance that eggs selected for hatching late in the season should come from fresh stock. By this I mean that failure will generally result from hatching eggs from the stock which have been confined to their breeding-pens since, perhaps, last December, whilst success is attained by making up a pen of stock birds which are "fresh"—birds which have not been yielding eggs steadily for months past. In order to have stock fresh for late breeding it is always advisable to keep two or three male birds reserved, keeping them away from the hens until they are required for the making up of a late pen; and hens or pullets can be taken from amongst those which have hatched and reared early broods, and which have thus been relieved from the strenuous task of egg-laying for a considerable part of spring. A pen made up from such fowls will supply eggs which are far more suitable for late hatching than the eggs from a pen which has been laying continuously for several months.

4. Now that the weather has become warm, very



POULTRY-RUNS ON MR. W. CLAYTON'S FARM AT SESSAY, THIRSK.

[Copyright.]

with late broods may in many cases be attributed to this lack of interest and attention, and unless the poultry-keeper has made up his mind to take a keen interest in his late chicks and to give them all the care they need he had better leave the eggs unset and send them to the nearest grocer's shop, for he will make more money this way.

2. Eggs for quick-maturing breeds ought to be chosen for late setting, because chickens of the larger breeds, which are slow in developing, will prove unprofitable when late hatched. Leghorns, Minorcas, Wyandottes, or any of the small or medium fowls, will lay in November or December if hatched now, and may thus prove more profitable than earlier-hatched chickens of the same breeds; but if Dorkings, Brahmas, Langshans, and fowls of this kind have not been hatched by the end of April, it is advisable to refrain from hatching them until autumn or early winter. Hatched at this time, they will come in as large roasters in spring, when prices are always remunerative.

great care is necessary in the collecting of eggs off the nests at frequent intervals throughout the day, and also in the keeping of them if they have to be kept for many days before being incubated. June is a month of great broodiness amongst hens, and in a very few hours a broody hen in the laying-boxes will spoil any new-laid eggs she sits upon. Again, we have a higher temperature now than we have had for some time past, and it is inadvisable to store the eggs in a warm pantry or kitchen.

5. Late broods will not live or thrive upon the same ground as has been occupied by the earlier chicks, and herein lies the mistake which is most often made by those attempting to raise late chickens. Let them be provided with a piece of ground which has not been occupied by poultry this year or at least for the past month or two, and let them have clean, freshly-painted coops and other appliances, and there is no more trouble about raising chicks in June than there is in March or April.

POULTRY CLUB.

THE monthly meeting of the Council was held on Friday, May 12, at two o'clock, at the London Chamber of Commerce, Oxford Court, Cannon Street, London, E.C., when there were present: Mr. H. Wallis (chair), Messrs. W. A. Jukes, W. Richardson, T. Firth, H. Corrie, F. J. Broomhead, S. C. Court, P. H. Bayliss, W. W. Broomhead, W. Bibby, W. Rice, W. Clarke, W. M. Bell, J. Horn, T. Threlford, W. J. Golding, F. J. S. Chatterton, Captain R. R. Allen, and Mr. G. Tyrwhitt-Drake, Hon. Sec. and Treasurer. The minutes of the April meeting were read and signed as correct.

The question was asked whether any further action was to be taken with regard to divulging particulars of the business done at the March meeting to the Press. Messrs. Bibby and Jukes, who were not present at the April meeting, both stated that they had not divulged any particulars to the Press. It was further mentioned that an incorrect report had been sent to the Press—namely, that matters with regard to the Brockhurst Poultry Farm had been reported as carried *nem. con.*

It was decided that a note *re* this error as follows be sent with this month's report, giving the exact number of votes for and against the matters in question.

The motion calling upon M. Taylor to show cause why his name should not be removed from the list of members was carried by 17 votes to 4. The proposition that "The Council of the Poultry Club place it on record that it was most undesirable for the manager of the Brockhurst Poultry Farm, under an assumed name, to enter his birds under Mr. W. W. Broomhead, as it is now admitted that the manager of the Brockhurst Poultry Farm is Mr. W. W. Broomhead's brother," carried by 13 votes to 5.

The following new members were duly elected: Recommended by Cornwall Branch—A. H. Hawkey, Fore Street, Newquay. Recommended by Surrey Branch—G. O. Berry, Lyme Regis Road, Banstead, near Epsom. Recommended by Cambridgeshire Branch—John Chivers, J.P., Wychfield, Cambridge. Recommended by Yorkshire Branch—Henry Bromet, Highfield, Tadcaster. Recommended by South Wales Branch—Geo. Mason (Mason and Edwards), Nantymoel Poultry Yards, near Bridgend, Glamorgan; and W. Edwards (Mason and Edwards), Nantymoel Poultry Yards, near Bridgend, Glamorgan. A. Falkner Nicholson, Highfield Hall, Leek, Staffs; W. Burge, East Brent, near Highbridge, Somerset; W. Foulds, Kirby Muxloe, Leicester; G. Shimmin, 1, Peverell Road, Weston Peverell, Plymouth; and R. Gwynne Furley, Bryn Amlwg, Prestbury, R.S.O., Glos.

The following societies were duly associated: Recommended by Gloucestershire Branch—Moreton-in-Marsh, Horticultural and Fanciers' Association, Hon. Sec., S. Walker Gillam, Moreton-in-Marsh, Gloucester; the Variety Wyandotte Club, Hon. Sec., Rev. J. W. A. Mackenzie, Whitwick Vicarage, near Leicester.

The following Shows were announced to be held under Club Rules, and specials allotted: Thornbury, Women's Agricultural and International Union, Delabole; Moreton-in-Marsh, Oswestry, Inverurie, Royal Northern, Merioneth.

CORRESPONDENCE.—The Hon. Secretary reported that the Cornwall Branch secretary was not carrying out his work in a satisfactory way and that he was unable to obtain replies to his letters or cash due to the Treasurer. It was decided that the Chairman of the Branch be written to with regard to the Branch Secretary's incapability and slackness, and his reply reported to the Council in due course.

Resolutions from the Cheshire and Surrey Branches, also the London Minorca Club, with regard to the Brockhurst Poultry Farm matter were read. After con-

siderable discussion as to the position of Messrs. F. J. Broomhead and W. W. Broomhead on the Council, having regard to the Brockhurst Poultry Farm incident, a resolution expressing the opinion of the Council that Mr. F. J. Broomhead and Mr. W. W. Broomhead should consider the propriety of resigning their seats on the Council was carried by 9 votes to 6 (Messrs. Broomhead not voting). A letter from Mr. Taylor protesting against his name being removed from the list of club members was read. It was resolved that it be acknowledged, with no comment.

Adjourned consideration of the disqualification of Mr. Harding's bird at the late Swannington Show: Letters from the Rev. J. W. A. Mackenzie, who judged and protested against the bird, were read, also a letter from Mr. Harding, denying that any colouring matter was put on the lobes of the bird before it left his yard for the show. It was decided that the Council had not sufficient evidence before them to take any action in the matter.

WILKINS *v.* COATES.—The Hon. Secretary reported since the last Council meeting he had received a printed report with regard to this case. It having been mentioned that neither persons were members of the Club, but that Mr. Coates was a member of the Black Orpington Club, associated to the Poultry Club, it was decided that the Hon. Secretary report the matter to the Hon. Secretary of the Black Orpington Club, requesting him to ask his Committee to investigate the matter and report in due course to the Council of the Poultry Club their opinion of the case and what steps, if any, they take.

The following motion was then proposed and seconded: "The advisability of allowing Press reporters to attend the Council Meetings," but it was not proceeded with.

The President mentioned that at a previous Council meeting he and Mr. Horn, as a Sub-Committee, had been asked to invest certain of the Club funds, both on deposit and on current account at the bank. He was of the opinion that some more definite instructions as to the sort of security the funds should be invested in should be given to the Sub-Committee, and it was decided that the funds in question be put in some Trustee security, the selection of same to be left to Messrs. H. Wallis and J. Horn.

The next meeting of the Council will be held at the London Chamber of Commerce, Oxford Court, Cannon Street, London, E.C., on Friday, June 9, at 2 p.m. All prospective members' names must reach the Hon. Secretary on or before May 31, and if residing in a county having a Branch, through the secretary of same.

G. TYRWHITT DRAKE, Hon. Sec. and Treasurer.

A Prize Worth Winning.

The *Smallholder* has inaugurated a competition which should be made widely known, for the prizes which are offered are certainly remarkable ones. The winner of the competition is to receive not only three acres of fertile ground and a complete homestead (consisting of a six-roomed cottage, a barn, a cowshed, a pigsty, and a fowlhouse, complete with all the necessary implements and tools), but also an eight hundred gallon cow, a couple of pedigree pigs, and three pens of prize fowls. Further than this the fortunate winner is to receive £1 a week for fifty-two weeks in order to give him a good start. Ninety-nine other prizes are offered in the competition, ranging from a second prize of £25 to a hundredth prize of a willow pattern clock. Full particulars may be obtained from the current issue of the *Smallholder*.

ANSWERS TO CORRESPONDENTS.

Infertile Eggs.

Will you please tell me how to distinguish fertile from unfertile eggs? When should they be tested?—M. G. (Enfield.)

The test should be made in a darkened room by candle-light, after the eggs have been incubated for six days. When looking at the flame of the candle through the egg, if the egg is perfectly clear you may take it to be infertile; while if the egg is fertile a spider-like spot will be observed, with several fine radiations therefrom. A mistake cannot easily be made on the seventh day, and for this reason we find the seventh day the most convenient time for testing.

Green Cut Bone.

Is fresh cut green bone a good thing to give laying fowls to increase egg-production? The eggs are to be used for hatching purposes. If so, how much should be fed, and how often should it be given? I have about eighty hens.—M. L. (Leamington.)

Green bones are a very valuable addition to the dietary of laying hens, as they encourage egg-production without being of a too stimulating nature. The bones should be ground or broken up finely, and mixed in their morning soft food. Give half an ounce per day per fowl in winter, but in summer three times per week will be sufficient.

Black Duck Eggs.

Some of my ducks are laying eggs the yolks of which are black, and I cannot account for it. They tell me that the water here is quite normal and the ducks are fed principally on crushed oats. I may say that the hen eggs are also very dark.—M. S. D. (Carnforth.)

In the three eggs submitted to us the yolks were in shades of colour from a light grey to a very dark slate. Both yolk substance and membrane were pigmented, but the eggs were perfectly fresh and free from any trace of odour. The condition probably arises from the blood being charged with certain mineral salts, such as permanganate of iron, derived from some kinds of clay soil. This is, we think, the explanation of the mystery, for although there are grains and vegetable known to influence the yellowness of yolks, we have never known them blackened from that cause. You might try the experiment of penning some of your ducks and poultry off the land, and observe the result on the eggs. We fear there is no other remedy.

Petits Poussins.

What are Petits Poussins? I have read somewhere they are very profitable indeed, and that it is not a difficult market to supply. For any help that you can give me I shall be thankful.—S. B. R. (Exeter.)

Petits Poussins are small chickens about four or five weeks old, and, as may readily be imagined,

to be ready at such an early age their food during this period must be of a very forcing nature. They are a luxury mostly indulged in by the wealthy classes, and the time when these birds are in season is during April, May, and June; at other times of the year there is no demand. The markets in this country are principally supplied with Petits Poussins from France and Belgium. For the man who specially lays himself out to supply this trade there is a fair remuneration, but nothing extravagant. When it is remembered that the food needed by the birds must be good and plentiful, and at four or five weeks the price rarely reaches more than 1s. 6d. or 1s. 9d. each, it will thus be realised that there are many more profitable branches of poultry-keeping.

A Fattening Project.

I should be glad of your opinion as to the prospects of a fattening establishment near London. I have sufficient accommodation and a fair quantity of surplus milk. The distance to market is not great, and I do not think the carriage on feeding stuffs would be excessive. I should, of course, engage a good fattener, but the question at issue is one of supply. Can I get the birds?—H. G. S. (High Stretfield.)

A very similar enterprise was undertaken a few years ago and only a few miles distant from you; moreover, the circumstances were very much like yours in the main details. The dairyman in question was in a large way of business, and conceived the idea of utilising the surplus milk in the way you suggest. He set up fattening coops and engaged one of the best men he could get from Sussex, but the great difficulty was that which you foresee—viz., the adequate supply of suitable lean chickens. I cannot say that the discontinuance of fattening was in this instance entirely due to this difficulty, because I believe there was also some objection raised on account of the nearness of the fattening quarters to some villa residences, but the supply was always a troublesome matter. In any such circumstances there is no possibility of local collection, and the only chance is to tap the chief sources of the lean chicken supply in Ireland, Wales, or one of the English rearing and collecting districts. Unless you can do this, and at reasonable rates for carriage, I should advise you to abandon the idea.

Short Replies.

W. E. S. (Cricklewood): Yes.

B. C. S. (Wye): The late Lewis Wright.

H. B. (Guelph, Canada): About November.

M. L. (Sandown, Isle of Wight): Buff Orpington.

H. P. (Crawley): We do not know to which you refer. There are about eighteen.

J. S. (Petersfield): If you care to send it to us we shall be pleased to give our opinion.

R. T. L. (Aberdeen): We will bear your remarks in mind. Thank you for your suggestions.

L. P. S. R. (Rio de Janeiro, Brazil): We must refer you to our advertising columns. Several firms are there advertising what you require.

R. W. M. (Carlow): We must refer you to the

article, "The Consumption of Eggs and Poultry," on Page 284—288 of the February issue.

- S. M. S. (Ipswich): 1oz. mercurial ointment, 1oz. lard, $\frac{1}{2}$ oz. powdered flowers of sulphur, and sufficient paraffin oil to make semi-liquid.
- A. R. K. (Cley, Norfolk): We have always found the following mixture very effective: 4 gallons of lime and water, 1 pint of paraffin oil, and $\frac{1}{4}$ lb. of soft soap. The former kills all insects, the latter prevents the whitewash peeling off.

TRADE NOTICES.

A Word of Warning.

However true the words may be that "Imitation is the sincerest form of flattery," it does not mean that "imitation" is acceptable and worthy of encouragement in matters where trade rights and privileges are concerned.

When an article of value and repute is in popular favour infringements generally follow.

To protect their name and reputation Messrs. Spratt's Patent, Limited, the world-renowned caterers for dogs, poultry, game, and domestic pet of all kinds, have found it of utmost importance to take prompt action in such cases as come under their notice. The substitution of inferior and worthless imitations, pushed by interested traders for the sake of extra profit, is not only a fraud on the purchaser, but detrimental to the trader himself.

The chicken-rearing season is now in full progress, and suitable foods for the young birds are of vital importance. Spratt's Chicken Meal, given as the warm morning feed, and Spratt's Chikko (a mixture of grain, cereals, and insect food) later in the day and at sunset, ensure all that can be desired in the production of strong and healthy chicks.

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In the event of any further offence of the kind, Messrs. Spratt's Patent, Limited, will be obliged if informers will write privately to the Managing Director at 24 and 25, Fenchurch Street, E.C.

Such information will be treated in strictest confidence.

Mr. Tamlin's Exports for April.

During the month of April Mr. W. Tamlin, of 40, St. Margarets, Twickenham, exported no fewer than 332 of his well-known Nonpareil Incubators, besides poultry pens and houses. This, we think, must constitute a record. The following is the detailed list: Six hundred poultry pens, fifty sets pigeon pens, and thirty turkey pens, to Royal Agricultural Society of Natal, South Africa; thirty 100, twenty 60, and five 30 incubators, twenty 100, fifteen 60 foster-mothers, and five 60 Sunbeam Rearers, to Fletcher Bradley, his agent for Canada; twelve 100 incubators and nine 100 foster-mothers, to G. Barelli, his agent for Italy; twenty-six 100 and six 60 incubators, to Woodhead, Plant, and Co., his agents for South Africa; ten 60 and twelve 100 foster-mothers and five 60 and six 100 Sunbeam Rearers, to F. Colman, his agent for Belgium; twelve 100 foster-mothers and six 100 incubators, to Ed. Baron, his agent for Switzerland; four 30, twenty 60, twenty-five 100, and five 200 incubators, fifteen 60 and twelve 100 foster-mothers, to H. Mascarenhas, his agent for Portugal; twenty 200 incubators, to A. Newcomb and Co., his agent for New Zealand; ten 100 and six 30 incubators, to Oakes Bros., and Co., his agents for Southern India; twenty Wonder

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Any of the following books will be supplied at the prices named. Cash must always accompany orders.

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Lett's Poultry-Keeper's Account Book. Edited by LEWIS WRIGHT. Cr. 8vo. Post free in the United Kingdom, the Colonies, and foreign countries, 2/8.

Poultry and Egg Raising at Home. By W. M. ELKINGTON. Illustrated. Price, post free, 1/2.

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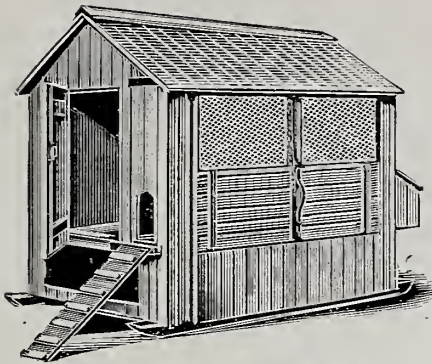
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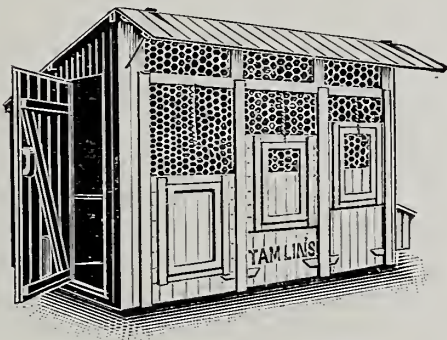
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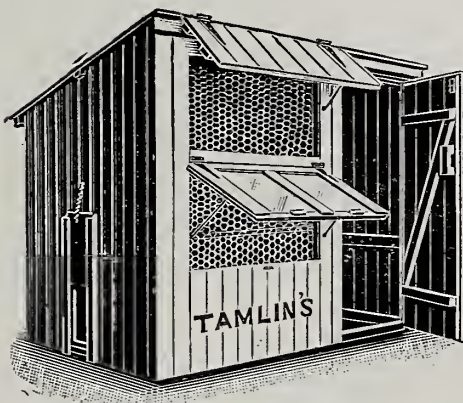
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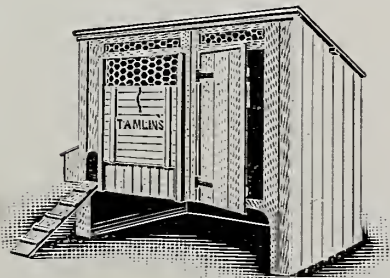
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Poultry Houses, to Mrs. Scott, Bermuda; four 100 and three 60 incubators, to Alexiff and Co., Warsaw, Russia; one 100 incubator and one 60 foster-mother, to David and Co., China; one 60 incubator, to G. E. Gavis, Egypt; one 100 incubator, to Geo. A. Rose, Columbia, S. America; two 60 incubators, to M. A. Swale, Colombo, Ceylon; one 30 incubator, to Geo. Morrison, Madagascar.

Exportations.

William H. Cook, of the Model Poultry Farm, St. Paul's Crav, Kent, has shipped the following birds and eggs during the past few weeks to clients abroad: Fifteen prize Black Orpington eggs to M. Tebbutt, France; thirty Faverolle and prize Minorca eggs to Mr. Telfer, Seattle, U.S.A.; thirty best White Orpington and Minorca eggs to Mrs. Cocking, Lower Austria; four Black Orpington cocks to Messrs. Ulyate, British East Africa; twenty-four best Buff Orpington eggs to Messrs. Guyer, Khan, India; twelve Blue Orpington eggs to Mrs. Kinchant, Portugal; one pen of Buff Orpington Ducks to M. Tebbutt, France; 100 eggs of White, Buff, and Black Orpingtons, White Wyandottes, and White Leghorns to M. Georges Sydenhame, France; 160 prize fowl, duck, and geese eggs to Senior Leite, Lisbon; one pen of Embden Geese and two pens of Aylesburys to Galatz, Black Sea; two White Orpington cocks to Mrs. Hasluch, Sweden; fifteen prize Black Orpingtons to Frans Vermunt, Netherlands; fifty best White Orpington eggs to Mr. Ashleigh, Vancouver; two cocks and six hens of White Orpingtons to Messrs. Lowen, Lower Austria; fifteen Speckled Sussex eggs to M. Doubourdieu, France; fifty Buff and White Orpington eggs to H. Johnson, Debersburg, Austria; twelve best Buff Orpington chickens to Carl Knothe, Germany; fifteen pens of Orpingtons, Wyandottes, Indian and Malay Game, Cochins, Minorcas, and Leghorns to Rio, Brazil; one cock and three White and one cock and three Buff Orpingtons, chiefly winners, to Howard Cross, Manitoba; 100 eggs to Mrs. Higford Eckbo, Sweden; two pens each of White and Buff Orpingtons to Messrs. Ward Bros., Orange River Colony, South Africa; fifty best Blue Orpington eggs to H. Cross, Manitoba; one prize pen of Speckled Sussex to M. Doubourdieu, France; and one pen each of Blue Leghorns, Black Minorcas, White and Buff Orpingtons, Barred Rocks, Rhode Island Reds, and Light Sussex (through Messrs. Graham Bros., of Bristol) to Buenos Ayres, South America.

RAILWAY ANNOUNCEMENTS.

Important Improvements on the G.E.R.

Although in point of mileage the route from Liverpool Street to Southend is considerably longer than that from Fenchurch Street Station, yet by the improved service of trains which the Great Eastern Railway Company are now running the journey can be made from Liverpool Street Station in fifty-eight minutes. This new arrangement has been made mainly in the interests of London business men now that the district of Southend and Westcliff has become so popular residentially. Four express trains now leave Southend every week-day, arriving at Liverpool Street before 10 a.m., and a similar number of expresses do the return journey between 5 p.m. and 6.30 p.m.

Felixstowe and Norwich also come into the scheme of improvements. A new train is now being run from Ipswich at 9.32 for Felixstowe; this connects with the 7.12 p.m. dining-car train from London to Ipswich.

A new later dining-car express is also being run to Norwich, leaving London at 6.37 p.m.

The Beautiful North-West.

The great problem of the Londoner is to find a suitable neighbourhood easily accessible to town, but yet amidst surroundings which make for health and family happiness. To assist him in his choice of this, the Great Central and Metropolitan Railways have started an illustrated A.B.C. Residential Gazette, under the title of "The Homestead," to be published quarterly, the first issue of which, April to June, is now before us. The districts with which "The Homestead" deals teem with historical associations and are the most beautiful adjacent to the Metropolis. Each suburb of the beautiful North-West is vividly described in the letterpress of this publication, and the many splendid photographs, in colour and tone, give an excellent idea of its many natural charms. This district is accounted the most healthy near London, and other factors which tend to make it a most desirable residential centre are its splendid scholastic establishments, the artistic and convenient class of house property available, the high-class local shops, and its accessibility to the City and West-End.

"The Homestead" will be sent, post free, on application to the Publicity Office, Great Central Railway, 216, Marylebone Road, N.W., or to the Publicity Department, Metropolitan Railway, Edgware Road, N.W.

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